

Missouri  
Department of  
Natural Resources

Use Attainability Analysis

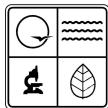
for

WBID 0597 East Yellow Creek

Submitted by  
Pickett Ray and Silver

To  
Missouri Department of Natural Resources  
Water Protection Program

Date Received: October 31, 2007



Missouri  
Department and Data Sheets for Recreational Use Stream Surveys  
Natural Resources

## **Data Sheet A – Water Body Identification**

## **I. Water Body Information (For water body being surveyed)**

Water Body Name (from USGS 7.5' quad): E. Yellow Creek
Missouri Water Body Identification (WBID) Number: 597
8-digit HUC: 20090415
County: Linn
Upstream Legal Description (from Table H): 7, 60N, 18W
Downstream Legal Description (from Table H): 20, 56N, 19W
Number of sites evaluated: 19
List all sites numbers, listed consequently upstream to downstream: 0597_01, 0597_02, 0597_03, 0597_04, 0597_05, 0597_06, 0597_07, 0597_08, 0597_09, 0597_10, 0597_11, 0597_12, 0597_13, 0597_14, 0597_15, 0597_16, 0597_17, 0597_18, 0597_19

**Site Locations Map(s):** Attach a map of the entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

**II. Facility Information** (list all permitted discharges to the water body segment)

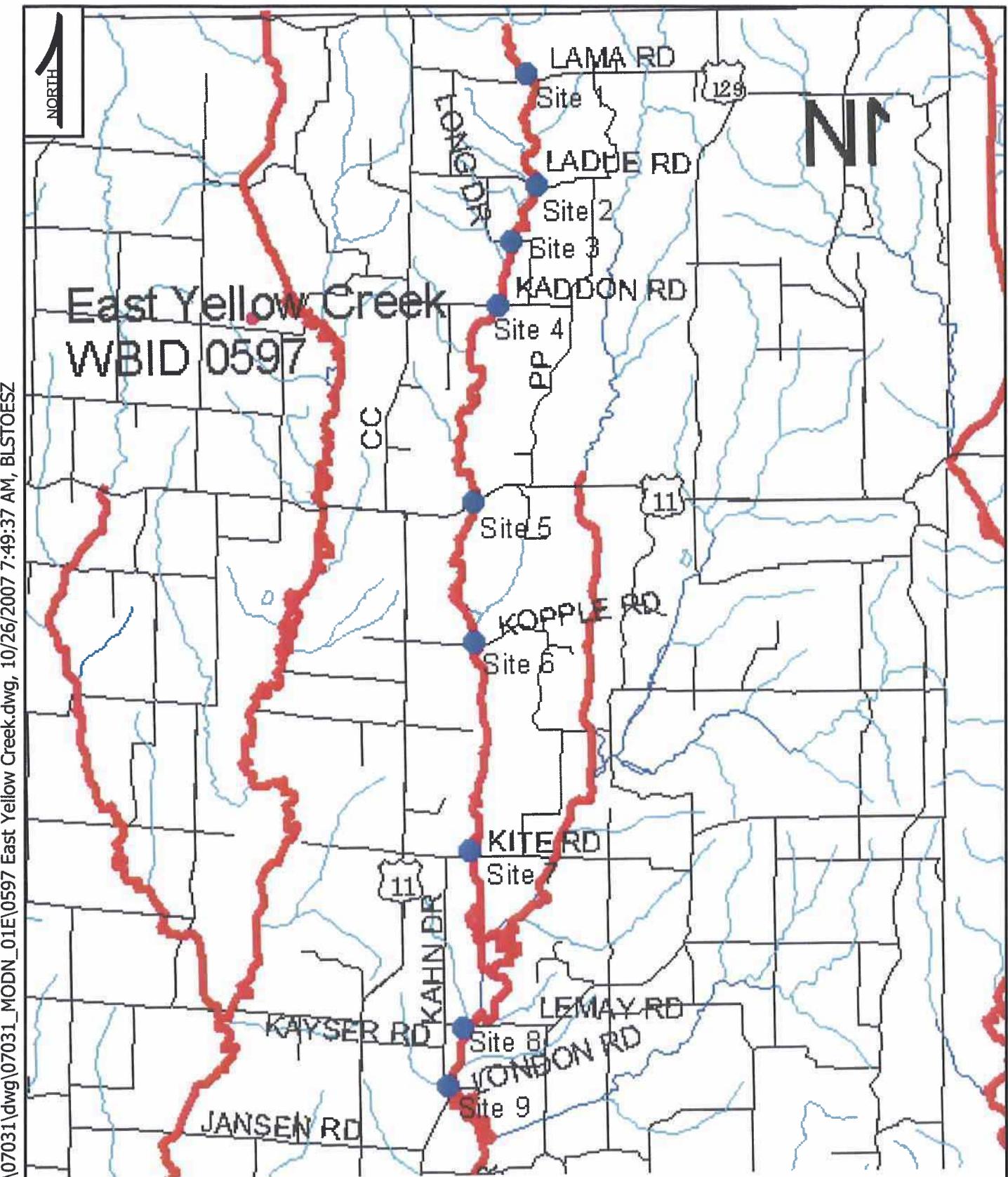
Facility Name(s) and Permit Number(s): PSF Valley View Finishing – MO 0118478

**III. UAA Surveyor (please print legibly)**

Name of Surveyor: Renee Martin	Telephone Number: 573-875-7844
Organization/Employer: Applied Environmental Solutions	

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

**Signed:** \_\_\_\_\_ **Date:** 10/1/07



### PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources  
Address: 333 Mid Rivers Mall Drive Phone: (636)397-1211  
St. Peters, Missouri 63376 Fax: (636)397-1104  
Website: [www.prs3.com](http://www.prs3.com)

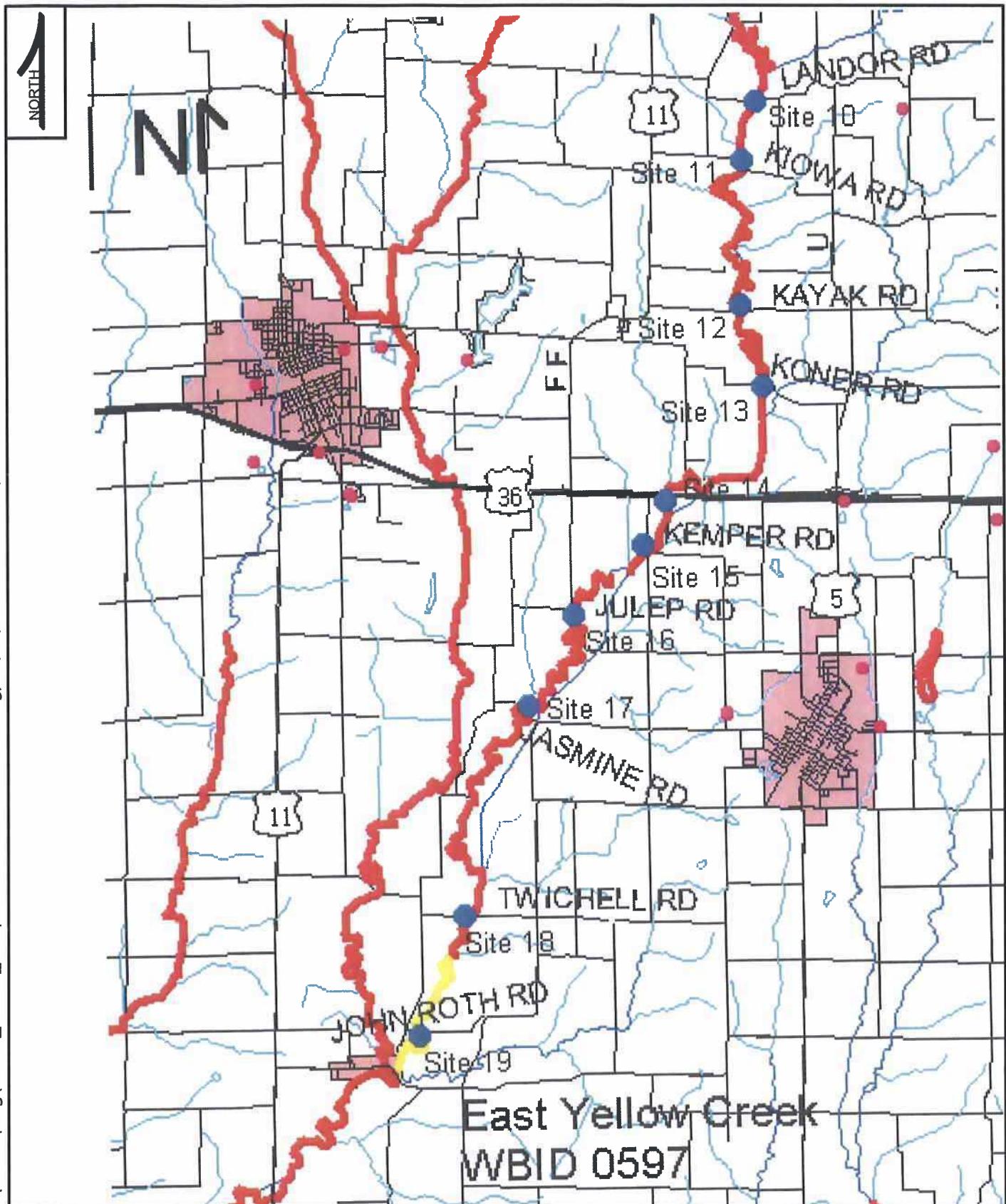
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WBID #: 0597  
Name: East Yellow Creek  
County: Linn  
GIS Location Map

Sheet 1 of 2

Map provided by AES.  
Please refer to USGS for exact site location  
indicators.

PRS Job Number: 07031.MODN.01E  
Drawn By: BLS Date: 10-16-07  
Checked By: JCV Date: 10-16-07



## PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources  
Address: 333 Mid Rivers Mall Drive Phone: (636)397-1211  
St. Peters, Missouri 63376 Fax: (636)397-1104  
Website: [www.prs3.com](http://www.prs3.com)

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WBID #: 0597  
Name: East Yellow Creek  
County: Linn  
GIS Location Map

Sheet 2 of 2

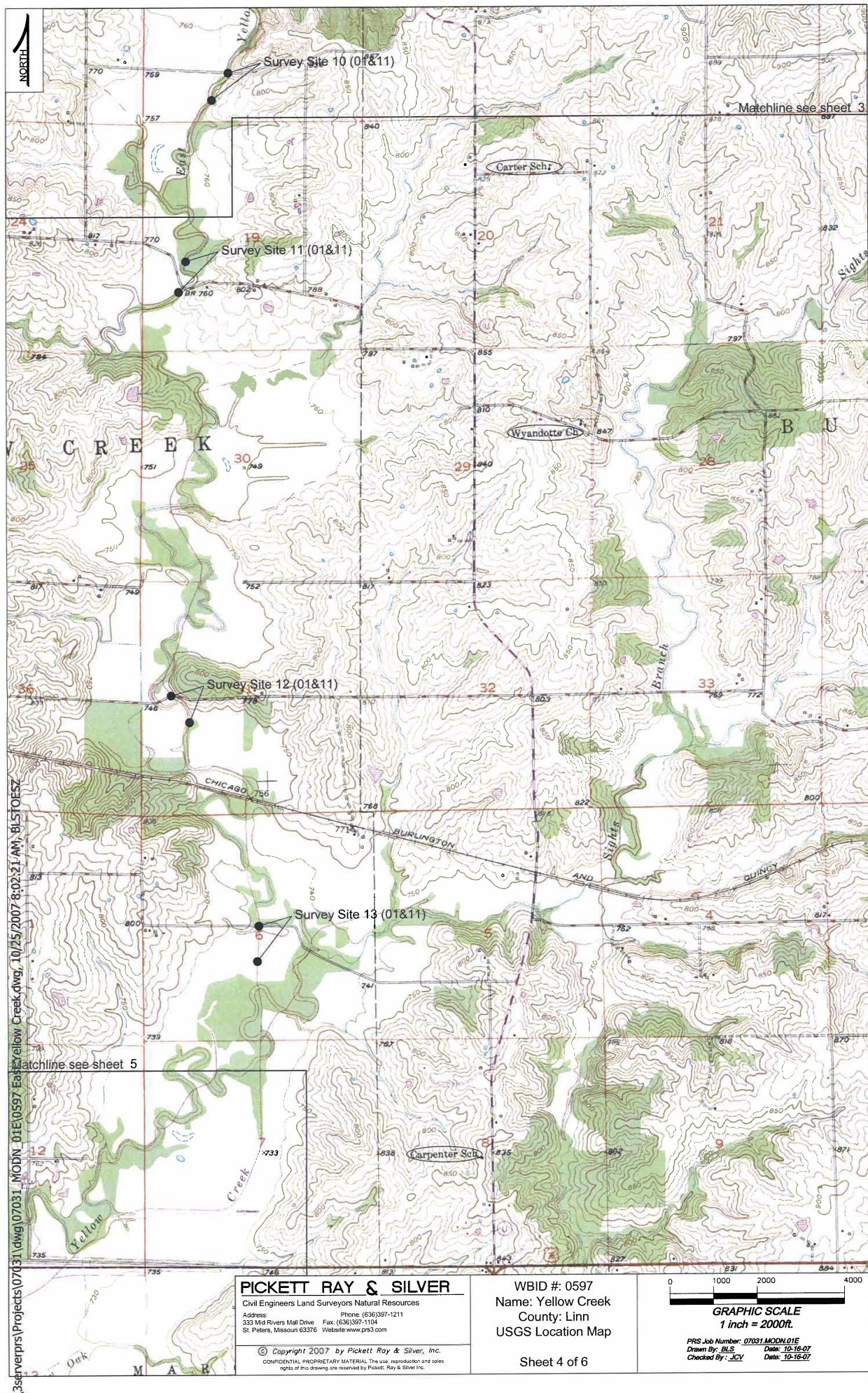
Map provided by AES.  
Please refer to USGS for exact site location  
indicators.

PRS Job Number: 07031.MODN.01E  
Drawn By: BLS Date: 10-16-07  
Checked By: JCV Date: 10-16-07

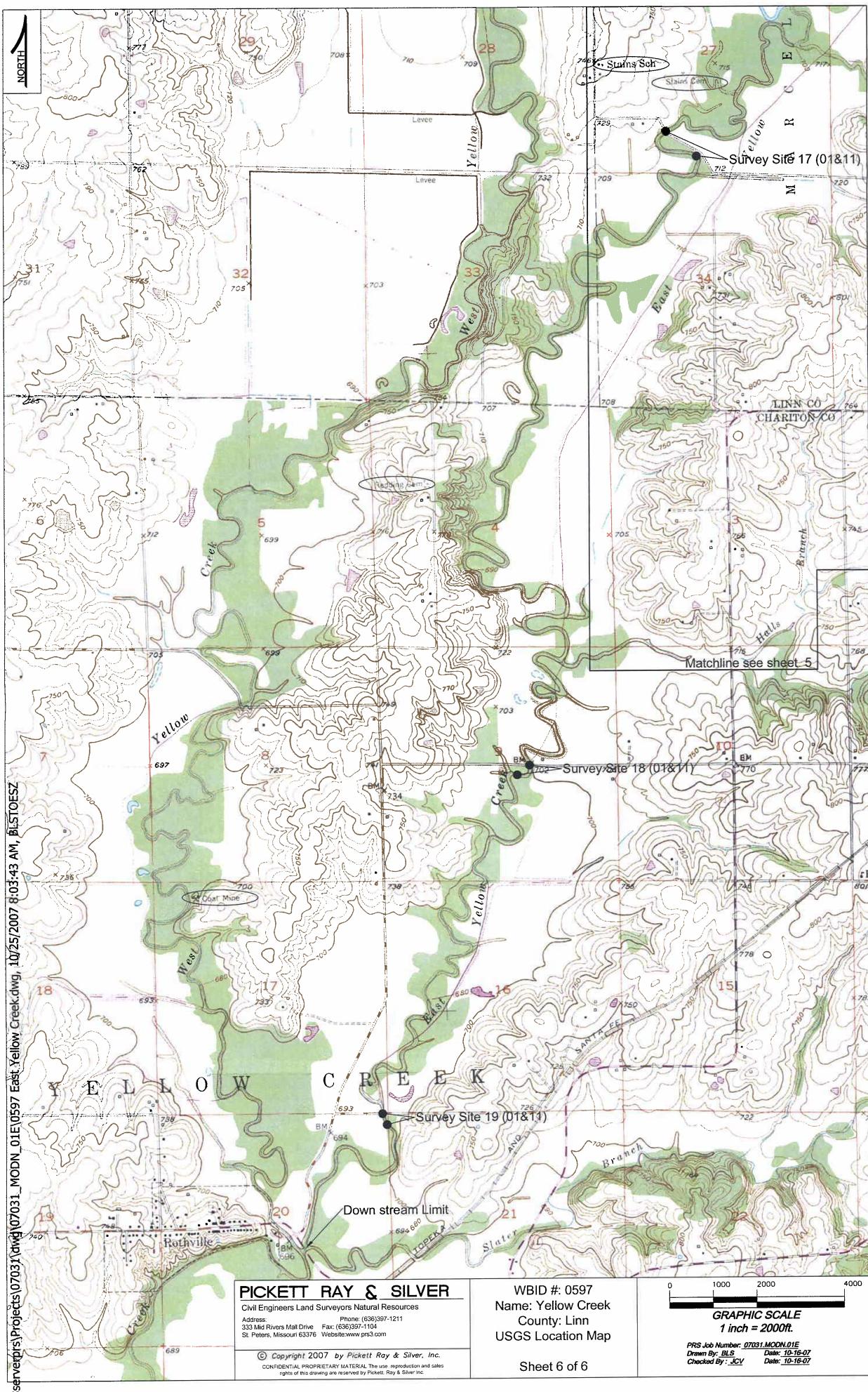


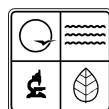












## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 14:00	Site Location Description (e.g., road crossing): Lama Road
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rain/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 504839	Northing (UTM Y): 4430544	Horizontal Accuracy: (EPE / FOM / PDOP)	14 feet	
Site 11	Easting (UTM X): 504954	Northing (UTM Y): 4430442	Horizontal Accuracy: (EPE / FOM / PDOP)	22 feet	

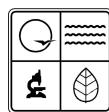
#### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_188	upstream	101_189	downstream	101_191	Dumped paint, chemicals
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_192	fence				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	90% Sand	% Silt	10% Mud/Clay	% Bedrock

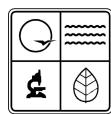
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

none

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Someone dumped a bunch of paint and other chemicals off bridge (see picture 101\_191).

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: 0597_1</p> <p>Estimated Channel Incision: _____ (in) (height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: 504839</td> <td style="width: 33%;"><b>01</b> UTM Y: 4430544</td> <td style="width: 33%; text-align: center;">14 feet</td> </tr> <tr> <td><b>11</b> UTM X: 504954</td> <td><b>11</b> UTM Y: 4430442</td> <td style="text-align: center;">22 feet</td> </tr> </table> <p>Average Stream Width: 2 (meters) Length of Survey Segment: 150 (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: JH/JF</p>	<b>01</b> UTM X: 504839	<b>01</b> UTM Y: 4430544	14 feet	<b>11</b> UTM X: 504954	<b>11</b> UTM Y: 4430442	22 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: 9/20/2007 Time: 2:00 PM</p> <p>Dissolved Oxygen: _____ (mg/L)</p> <p>Dissolved Oxygen: _____ (% sat)</p> <p>Specific Cond: _____ (µS/cm)</p> <p>Water Temperature: _____ (°C)</p> <p style="color: red;">DRY</p>															
<b>01</b> UTM X: 504839	<b>01</b> UTM Y: 4430544	14 feet																					
<b>11</b> UTM X: 504954	<b>11</b> UTM Y: 4430442	22 feet																					
Transect Cross-Section																							
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.45	0	0.06	0.01	0.21	0	0.15	0	0.18	0	0.10	0	0.10	0.01	0.06	0.01	0.12	0.01	0.46	0.08	0.20	0.02	
2	0.90	0	0.12	0.01	0.42	0	0.30	0	0.36	0	0.20	0	0.20	0.02	0.12	0.01	0.24	0.01	0.92	0.21	0.40	0.08	
3	1.35	0	0.18	0.01	0.63	0	0.45	0	0.54	0	0.30	0	0.30	0.01	0.18	0.02	0.36	0.01	1.38	0.26	0.60	0.09	
4	1.80	0	0.24	0.01	0.84	0	0.60	0	0.72	0	0.40	0	0.40	0.01	0.24	0.01	0.48	0.02	1.84	0.32	0.80	0.12	
5	2.25	0	0.30	0.01	1.05	0	0.75	0	0.90	0	0.50	0	0.50	0.09	0.30	0.03	0.60	0.01	2.30	0.33	1.00	0.14	
6	2.70	0	0.36	0.01	1.26	0	0.90	0	1.08	0	0.60	0	0.60	0.06	0.36	0.04	0.72	0.01	2.76	0.28	1.20	0.15	
7	3.15	0	0.42	0.01	1.47	0	1.05	0	1.26	0	0.70	0	0.70	0.05	0.42	0.03	0.84	0.01	3.22	0.24	1.40	0.13	
8	3.60	0	0.48	0.01	1.68	0	1.20	0	1.44	0	0.80	0	0.80	0.02	0.48	0.02	0.96	0.01	3.68	0.21	1.60	0.11	
9	4.05	0	0.54	0.01	1.89	0	1.35	0	1.62	0	0.90	0	0.90	0.01	0.54	0.01	1.08	0.01	4.14	0.20	1.80	0.05	
<b>Right Bank</b>	4.5	0	0.6	0.01	2.1	0	1.5	0	1.8	0	1.05	0	1	0	0.6	0	1.25	0	4.65	0	2	0	
<b>Feature Type</b> (riffle, run, or pool)	dry	pool	dry	dry	dry	dry	dry	dry	dry	dry	dry	pool	pool	pool									

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

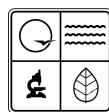
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 14:30	Site Location Description (e.g., road crossing): Ladue Road
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0505003	Northing (UTM Y): 4428457	Horizontal Accuracy: (EPE / FOM / PDOP)	16 feet	
Site 11	Easting (UTM X): 0504902	Northing (UTM Y): 4428334	Horizontal Accuracy: (EPE / FOM / PDOP)	18 feet	

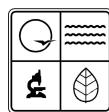
#### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_194	upstream	101_193	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other: none

**Substrate\*:** (These values should add up to 100%.)

% Cobble	5% Gravel	80% Sand	% Silt	15% Mud/Clay	% Bedrock
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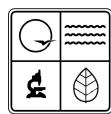
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Cattails  
 Duckweed  
 Algae

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Estimated Channel Incision: <u>3</u> (in)(height between low bank width and water)</p>	<p>Site #: <u>0597_2</u></p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>505003</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4428457</u></td> <td style="width: 33%; text-align: right;">16 feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>504908</u></td> <td><b>11</b> UTM Y: <u>4428334</u></td> <td style="text-align: right;">18 feet</td> </tr> </table> <p>Average Stream Width: <u>4</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)</p> <p>Field Staff: <u>JH/JF</u></p>	<b>01</b> UTM X: <u>505003</u>	<b>01</b> UTM Y: <u>4428457</u>	16 feet	<b>11</b> UTM X: <u>504908</u>	<b>11</b> UTM Y: <u>4428334</u>	18 feet	<p style="text-align: center;"><b>Dissolved Oxygen</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Date: <u>9/20/2007</u></td> <td style="width: 50%;">Time: <u>2:30 PM</u></td> </tr> <tr> <td>Dissolved Oxygen: <u>3.03</u> (mg/L)</td> <td></td> </tr> <tr> <td>Dissolved Oxygen: <u>35.3</u> (% sat)</td> <td></td> </tr> <tr> <td>Specific Cond: <u>390.8</u> (µS/cm)</td> <td></td> </tr> <tr> <td>Water Temperature: <u>25</u> (°C)</td> <td></td> </tr> </table>	Date: <u>9/20/2007</u>	Time: <u>2:30 PM</u>	Dissolved Oxygen: <u>3.03</u> (mg/L)		Dissolved Oxygen: <u>35.3</u> (% sat)		Specific Cond: <u>390.8</u> (µS/cm)		Water Temperature: <u>25</u> (°C)							
<b>01</b> UTM X: <u>505003</u>	<b>01</b> UTM Y: <u>4428457</u>	16 feet																						
<b>11</b> UTM X: <u>504908</u>	<b>11</b> UTM Y: <u>4428334</u>	18 feet																						
Date: <u>9/20/2007</u>	Time: <u>2:30 PM</u>																							
Dissolved Oxygen: <u>3.03</u> (mg/L)																								
Dissolved Oxygen: <u>35.3</u> (% sat)																								
Specific Cond: <u>390.8</u> (µS/cm)																								
Water Temperature: <u>25</u> (°C)																								
<b>Transect Cross-Section</b>																								
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>			
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)		
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.15	0.04	0.57	0.10	0.16	<.01	0.56	0.20	0.50	0.20	0.44	0.11	0.12	0.03	0.31	0.06	0.44	0.15	0.43	0.10	0.55	0.14		
2	0.30	0.08	1.14	0.11	0.32	0.01	1.12	0.24	1.00	0.26	0.88	0.25	0.24	0.04	0.62	0.07	0.88	0.60	0.86	0.15	1.10	0.25		
3	0.45	0.18	1.71	0.10	0.48	0.01	1.68	0.34	1.50	0.30	1.32	0.45	0.36	0.05	0.93	0.10	1.32	0.60	1.29	0.22	1.65	0.35		
4	0.60	0.26	2.28	0.12	0.64	0.02	2.24	0.37	2.00	0.35	1.76	0.76	0.48	0.08	1.24	0.09	1.76	0.50	1.72	0.25	2.20	0.60		
5	0.75	0.30	2.85	0.20	0.80	0.03	2.80	0.35	2.50	0.40	2.20	0.72	0.60	0.08	1.55	0.05	2.20	0.54	2.15	0.21	2.75	0.73		
6	0.90	0.21	3.42	0.25	0.96	0.05	3.36	0.31	3.00	0.34	2.64	0.55	0.72	0.09	1.86	0.01	2.64	0.40	2.58	0.20	3.30	0.75		
7	1.05	0.10	3.99	0.34	1.12	0.06	3.92	0.24	3.50	0.21	3.08	0.53	0.84	0.08	2.17	0.02	3.08	0.45	3.01	0.15	3.85	0.74		
8	1.20	0.07	4.56	0.40	1.28	0.04	4.48	0.22	4.00	0.11	3.52	0.51	0.96	0.05	2.48	0.13	3.52	0.30	3.44	0.10	4.40	0.60		
9	1.35	0.01	5.13	0.40	1.44	0.01	5.04	0.14	4.50	0.06	3.96	0.49	1.08	0.01	2.79	0.25	3.96	0.15	3.87	0.05	4.95	0.55		
<b>Right Bank</b>	1.5	0	5.75	0	1.5	0	5.6	0	5	0	4.4	0	1.25	0	3.1	0	4.45	0	4.35	0	5	0		
<b>Feature Type</b> (riffle, run, or pool)	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	run	Pool	Pool	Pool	Pool	run	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool		

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

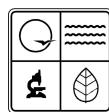
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 15:15	Site Location Description (e.g., road crossing): Long Dr.- becomes a field road
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear/cloudy	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0504551	Northing (UTM Y): 4427450	Horizontal Accuracy: (EPE / FOM / PDOP)	20 feet	
Site 11	Easting (UTM X): 0504466	Northing (UTM Y): 4427261	Horizontal Accuracy: (EPE / FOM / PDOP)	16 feet	

#### Photos:

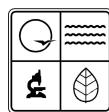
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_197	upstream	101_196	downstream	101_198	Dam at Transect 08
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other: none

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	80% Sand	% Silt	20% Mud/Clay	% Bedrock
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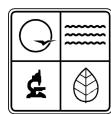
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Duckweed  
 Algae  
 Water primrose  
 Arrowhead

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Long Rd. no longer exists, becomes a field road.

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/20/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: 0597_03</p> <p>Estimated Channel Incision: 2 (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33.33%;">01 UTM X: 504551</td> <td style="width: 33.33%;">UTM Y: 4427450</td> <td style="width: 33.33%;">20 feet</td> </tr> <tr> <td>11 UTM X: 504466</td> <td>UTM Y: 4427261</td> <td>16 feet</td> </tr> </table> <p>Average Stream Width: 6 (meters) Length of Survey Segment: 150 (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: JH/JF</p>	01 UTM X: 504551	UTM Y: 4427450	20 feet	11 UTM X: 504466	UTM Y: 4427261	16 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: 9/20/2007 Time: 3:15 PM</p> <p>Dissolved Oxygen: 4.6 (mg/L)</p> <p>Dissolved Oxygen: 62.1 (% sat)</p> <p>Specific Cond: 339.8 (µS/cm)</p> <p>Water Temperature: 31.4 (°C)</p>																																																																																																																																																																																																																																																																																																			
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<td>0.37</td> <td>2.20</td> <td>0.55</td> <td>0.66</td> <td>0</td> <td>1.18</td> <td>0.30</td> <td>0.92</td> <td>0.18</td> <td>0.52</td> <td>0.01</td> </tr> <tr> <td>3</td> <td>0.24</td> <td>0.01</td> <td>1.53</td> <td>0.46</td> <td>2.31</td> <td>0.09</td> <td>2.34</td> <td>0.90</td> <td>1.80</td> <td>0.60</td> <td>3.00</td> <td>0.39</td> <td>3.30</td> <td>0.50</td> <td>0.90</td> <td>0</td> <td>1.77</td> <td>0.55</td> <td>1.38</td> <td>0.26</td> <td>0.78</td> <td>0.06</td> </tr> <tr> <td>4</td> <td>0.32</td> <td>0.02</td> <td>2.04</td> <td>0.70</td> <td>3.08</td> <td>0.13</td> <td>3.12</td> <td>0.80</td> <td>2.40</td> <td>0.66</td> <td>4.00</td> <td>0.34</td> <td>4.40</td> <td>0.64</td> <td>1.20</td> <td>0</td> <td>2.36</td> <td>0.72</td> <td>1.84</td> <td>0.34</td> <td>1.04</td> <td>0.26</td> </tr> <tr> <td>5</td> <td>0.40</td> <td>0.02</td> <td>2.55</td> <td>0.80</td> <td>3.85</td> <td>0.15</td> <td>3.90</td> <td>0.69</td> <td>3.00</td> <td>0.55</td> <td>5.00</td> <td>0.26</td> <td>5.50</td> <td>0.80</td> <td>1.50</td> <td>0</td> <td>2.95</td> <td>0.55</td> <td>2.30</td> <td>0.40</td> <td>1.30</td> <td>0.23</td> </tr> <tr> <td>6</td> <td>0.48</td> <td>0.01</td> <td>3.06</td> <td>0.80</td> <td>4.62</td> <td>0.23</td> <td>4.68</td> <td>0.47</td> <td>3.60</td> <td>0.42</td> <td>6.00</td> <td>0.37</td> <td>6.60</td> <td>0.65</td> <td>1.80</td> <td>0</td> <td>3.54</td> <td>0.20</td> <td>2.76</td> <td>0.34</td> <td>1.56</td> <td>0.24</td> </tr> <tr> <td>7</td> <td>0.56</td> <td>0.01</td> <td>3.57</td> <td>0.57</td> <td>5.39</td> <td>0.28</td> <td>5.46</td> <td>0.35</td> <td>4.20</td> <td>0.24</td> <td>7.00</td> <td>0.34</td> <td>7.70</td> <td>0.71</td> <td>2.10</td> <td>0</td> <td>4.13</td> <td>0.11</td> <td>3.22</td> <td>0.29</td> <td>1.82</td> <td>0.27</td> </tr> <tr> <td>8</td> <td>0.64</td> <td>0.01</td> <td>4.08</td> <td>0.30</td> <td>6.16</td> <td>0.29</td> <td>6.24</td> <td>0.24</td> <td>4.80</td> <td>0.16</td> <td>8.00</td> <td>0.40</td> <td>8.80</td> 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6	0.48	0.01	3.06	0.80	4.62	0.23	4.68	0.47	3.60	0.42	6.00	0.37	6.60	0.65	1.80	0	3.54	0.20	2.76	0.34	1.56	0.24																																																																																																																																																																																																																																																																																					
7	0.56	0.01	3.57	0.57	5.39	0.28	5.46	0.35	4.20	0.24	7.00	0.34	7.70	0.71	2.10	0	4.13	0.11	3.22	0.29	1.82	0.27																																																																																																																																																																																																																																																																																					
8	0.64	0.01	4.08	0.30	6.16	0.29	6.24	0.24	4.80	0.16	8.00	0.40	8.80	0.55	2.40	0	4.72	0.08	3.68	0.12	2.08	0.11																																																																																																																																																																																																																																																																																					
9	0.72	0.01	4.59	0.12	6.93	0.22	7.02	0.14	5.40	0.10	9.00	0.25	9.90	0.40	2.70	0	5.31	0.02	4.14	0.08	2.34	0.04																																																																																																																																																																																																																																																																																					
Right Bank	0.85	0	5.1	0	7.7	0	7.8	0	6	0	10	0	11	0	3	0	5.9	0	4.6	0	2.65	0																																																																																																																																																																																																																																																																																					
Feature Type (riffle, run, or pool)	run	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	dry	pool	pool	pool	pool	pool	pool																																																																																																																																																																																																																																																																																					

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

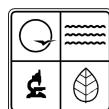
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 10:30	Site Location Description (e.g., road crossing): Kaddon Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0504242	Northing (UTM Y): 4426248	Horizontal Accuracy: (EPE / FOM / PDOP)	18 feet	
Site 11	Easting (UTM X): 0504111	Northing (UTM Y): 4426099	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet	

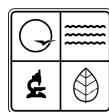
### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_201	downstream	101_202	upstream	101_203	Livestock watering
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock Watering

Comments / Other:

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	70% Sand	% Silt	30% Mud/Clay	% Bedrock
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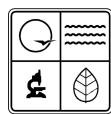
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Water primrose  
 Arrowhead  
 Grasses  
 Algae

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge <sup>1</sup>	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: iron

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

1 sludge= thick mucky mud

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07  
 Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: 0597_04</p> <p>Estimated Channel Incision: _____ (in) (height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: 504242</td> <td style="width: 33%;"><b>02</b> UTM Y: 4426248</td> <td style="width: 34%; text-align: center;">18 feet</td> </tr> <tr> <td><b>11</b> UTM X: 504111</td> <td>UTM Y: 4426099</td> <td style="text-align: center;">19 feet</td> </tr> </table> <p>Average Stream Width: 3 (meters) Length of Survey Segment: 150 (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: JH/JF</p>	<b>01</b> UTM X: 504242	<b>02</b> UTM Y: 4426248	18 feet	<b>11</b> UTM X: 504111	UTM Y: 4426099	19 feet	<p style="text-align: center;"><b>Dissolved Oxygen</b></p> <p>Date: 9/22/2007 Time: 10:30 AM</p> <p>Dissolved Oxygen: 2.54 (mg/L)</p> <p>Dissolved Oxygen: 30.3 (% sat)</p> <p>Specific Cond: 330.4 (µS/cm)</p> <p>Water Temperature: 16.8 (°C)</p>														
<b>01</b> UTM X: 504242	<b>02</b> UTM Y: 4426248	18 feet																				
<b>11</b> UTM X: 504111	UTM Y: 4426099	19 feet																				
<b>Transect Cross-Section</b>																						
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.14	0.01	0.12	0.05	0.54	0.20	0.38	0.07	0.20	0.02	0.33	0.07	0.56	0.41	0.19	0.02	0.28	0.00	0.44	0.02	0.09	0.02
2	0.28	0.01	0.24	0.08	1.08	0.33	0.76	0.11	0.40	0.05	0.66	0.10	1.12	0.49	0.38	0.05	0.56	0.00	0.88	0.05	0.18	0.04
3	0.42	0.01	0.36	0.10	1.62	0.45	1.14	0.18	0.60	0.05	0.99	0.20	1.68	0.62	0.57	0.08	0.84	0.00	1.32	0.06	0.27	0.05
4	0.56	0.02	0.48	0.11	2.16	0.40	1.52	0.24	0.80	0.09	1.32	0.28	2.24	0.71	0.76	0.08	1.12	0.00	1.76	0.02	0.36	0.04
5	0.70	0.01	0.60	0.09	2.70	0.40	1.90	0.29	1.00	0.09	1.65	0.36	2.80	0.70	0.95	0.05	1.40	0.00	2.20	0.07	0.45	0.05
6	0.84	0.02	0.72	0.07	3.24	0.27	2.28	0.36	1.20	0.12	1.98	0.42	3.36	0.67	1.14	0.05	1.68	0.00	2.64	0.06	0.54	0.07
7	0.98	0.01	0.84	0.05	3.78	0.10	2.66	0.40	1.40	0.13	2.31	0.49	3.92	0.54	1.33	0.04	1.96	0.00	3.08	0.09	0.63	0.05
8	1.12	0.01	0.96	0.03	4.32	0.06	3.04	0.39	1.60	0.10	2.64	0.40	4.48	0.39	1.52	0.03	2.24	0.00	3.52	0.12	0.72	0.03
9	1.26	0.01	1.08	0.01	4.86	0.54	3.42	0.21	1.80	0.07	2.97	0.19	5.04	0.21	1.71	0.01	2.52	0.00	3.93	0.08	0.81	0.01
<b>Right Bank</b>	1.43	0	1.21	0	5.47	0	3.8	0	2	0	3.39	0	5.68	0	1.97	0	2.84	0	4.47	0	0.99	0
<b>Feature Type</b> (riffle, run, or pool)	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	dry	pool	pool	pool	pool	pool	pool

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

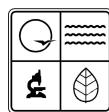
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 11:30 am	Site Location Description (e.g., road crossing): Hwy. 11 Bridge
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0503613	Northing (UTM Y): 4422460	Horizontal Accuracy: (EPE / FOM / PDOP)	20 feet
Site 11	Easting (UTM X): 0503678	Northing (UTM Y): 4422237	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet

#### Photos:

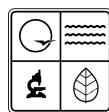
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_204	upstream	101_205	Downstream- fence		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

**Substrate\*:** (These values should add up to 100%.)

% Cobble	1% Gravel	80% Sand	% Silt	19% Mud/Clay	% Bedrock
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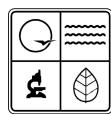
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae  
Arrowhead

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**

**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_06</u></p> <p>Estimated Channel Incision: <u>2</u> (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>503746</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4419775</u></td> <td style="width: 33%; text-align: center;">21 feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>503719</u></td> <td><b>11</b> UTM Y: <u>4419573</u></td> <td style="text-align: center;">17 feet</td> </tr> </table> <p>Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/JF</u></p>	<b>01</b> UTM X: <u>503746</u>	<b>01</b> UTM Y: <u>4419775</u>	21 feet	<b>11</b> UTM X: <u>503719</u>	<b>11</b> UTM Y: <u>4419573</u>	17 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>12:10 PM</u></p> <p>Dissolved Oxygen: <u>3.83</u> (mg/L)</p> <p>Dissolved Oxygen: <u>41.6</u> (% sat)</p> <p>Specific Cond: <u>404.7</u> (µS/cm)</p> <p>Water Temperature: <u>21</u> (°C)</p>															
<b>01</b> UTM X: <u>503746</u>	<b>01</b> UTM Y: <u>4419775</u>	21 feet																					
<b>11</b> UTM X: <u>503719</u>	<b>11</b> UTM Y: <u>4419573</u>	17 feet																					
<b>Transect Cross-Section</b>																							
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.24	0.20	0.34	0.08	0.69	0.07	0.75	0.13	0.60	0.15	0.84	0.21	0.84	0.21	0.70	0.03	0.73	0.39	0.45	0.47	0.42	0.62	
2	0.48	0.29	0.68	0.11	1.38	0.08	1.50	0.22	1.20	0.27	1.68	0.19	1.68	0.20	1.40	0.11	1.46	0.25	0.90	0.71	0.84	0.64	
3	0.72	0.33	1.02	0.09	2.07	0.05	2.25	0.12	1.80	0.21	2.52	0.28	2.52	0.16	2.10	0.15	2.19	0.40	1.35	0.61	1.26	0.61	
4	0.96	0.25	1.36	0.10	2.76	0.00	3.00	0.18	2.40	0.26	3.36	0.26	0.36	0.21	2.80	0.17	2.92	0.25	1.80	0.42	1.68	0.65	
5	1.20	0.13	1.70	0.11	3.45	0.10	3.75	0.21	3.00	0.25	4.20	0.27	4.20	0.32	3.50	0.27	3.65	0.22	2.25	0.43	2.10	0.66	
6	1.44	0.12	2.04	0.10	4.14	0.05	4.50	0.19	3.60	0.20	5.04	0.25	5.04	0.25	4.20	0.40	4.38	0.28	2.70	0.49	2.52	0.56	
7	1.68	0.09	2.38	0.12	4.83	0.06	5.25	0.17	4.20	0.22	5.88	0.28	5.88	0.41	4.90	0.47	5.11	0.43	3.15	0.68	2.94	0.67	
8	1.92	0.06	2.72	0.07	5.52	0.06	6.00	0.11	4.80	0.17	6.72	0.20	6.72	0.26	5.60	0.43	5.84	0.44	3.60	0.50	3.36	0.72	
9	2.16	0.03	3.06	0.03	6.21	0.01	6.75	0.02	5.40	0.16	7.56	0.18	7.56	0.13	6.30	0.42	6.57	0.46	4.05	0.48	3.78	0.57	
<b>Right Bank</b>		2.42	0	3.49	0	6.95	0	7.6	0	6.05	0	8.49	0	8.43	0	7	0	7.35	0	4.56	0	4.21	0
Feature Type (riffle, run, or pool)		Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

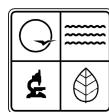
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 12:10 pm	Site Location Description (e.g., road crossing): Kopple Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0503746	Northing (UTM Y): 4419775	Horizontal Accuracy: (EPE / FOM / PDOP)	21 feet
Site 11	Easting (UTM X): 0503719	Northing (UTM Y): 4419573	Horizontal Accuracy: (EPE / FOM / PDOP)	17 feet

#### Photos:

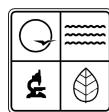
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_206	downstream	101_207	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
none

**Substrate\*:** (These values should add up to 100%.)

1% Cobble	1% Gravel	90% Sand	% Silt	8% Mud/Clay	% Bedrock
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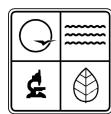
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae  
Grasses  
Willows  
duckweed

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input checked="" type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_06</u></p> <p>Estimated Channel Incision: <u>2</u> (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>503746</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4419775</u></td> <td style="width: 33%; text-align: center;">21 feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>503719</u></td> <td><b>11</b> UTM Y: <u>4419573</u></td> <td style="text-align: center;">17 feet</td> </tr> </table> <p>Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/JF</u></p>	<b>01</b> UTM X: <u>503746</u>	<b>01</b> UTM Y: <u>4419775</u>	21 feet	<b>11</b> UTM X: <u>503719</u>	<b>11</b> UTM Y: <u>4419573</u>	17 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>12:10 PM</u></p> <p>Dissolved Oxygen: <u>3.83</u> (mg/L)</p> <p>Dissolved Oxygen: <u>41.6</u> (% sat)</p> <p>Specific Cond: <u>404.7</u> (µS/cm)</p> <p>Water Temperature: <u>21</u> (°C)</p>														
<b>01</b> UTM X: <u>503746</u>	<b>01</b> UTM Y: <u>4419775</u>	21 feet																				
<b>11</b> UTM X: <u>503719</u>	<b>11</b> UTM Y: <u>4419573</u>	17 feet																				
<b>Transect Cross-Section</b>																						
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.24	0.20	0.34	0.08	0.69	0.07	0.75	0.13	0.60	0.15	0.84	0.21	0.84	0.21	0.70	0.03	0.73	0.39	0.45	0.47	0.42	0.62
2	0.48	0.29	0.68	0.11	1.38	0.08	1.50	0.22	1.20	0.27	1.68	0.19	1.68	0.20	1.40	0.11	1.46	0.25	0.90	0.71	0.84	0.64
3	0.72	0.33	1.02	0.09	2.07	0.05	2.25	0.12	1.80	0.21	2.52	0.28	2.52	0.16	2.10	0.15	2.19	0.40	1.35	0.61	1.26	0.61
4	0.96	0.25	1.36	0.10	2.76	0.00	3.00	0.18	2.40	0.26	3.36	0.26	0.36	0.21	2.80	0.17	2.92	0.25	1.80	0.42	1.68	0.65
5	1.20	0.13	1.70	0.11	3.45	0.10	3.75	0.21	3.00	0.25	4.20	0.27	4.20	0.32	3.50	0.27	3.65	0.22	2.25	0.43	2.10	0.66
6	1.44	0.12	2.04	0.10	4.14	0.05	4.50	0.19	3.60	0.20	5.04	0.25	5.04	0.25	4.20	0.40	4.38	0.28	2.70	0.49	2.52	0.56
7	1.68	0.09	2.38	0.12	4.83	0.06	5.25	0.17	4.20	0.22	5.88	0.28	5.88	0.41	4.90	0.47	5.11	0.43	3.15	0.68	2.94	0.67
8	1.92	0.06	2.72	0.07	5.52	0.06	6.00	0.11	4.80	0.17	6.72	0.20	6.72	0.26	5.60	0.43	5.84	0.44	3.60	0.50	3.36	0.72
9	2.16	0.03	3.06	0.03	6.21	0.01	6.75	0.02	5.40	0.16	7.56	0.18	7.56	0.13	6.30	0.42	6.57	0.46	4.05	0.48	3.78	0.57
<b>Right Bank</b>	2.42	0	3.49	0	6.95	0	7.6	0	6.05	0	8.49	0	8.43	0	7	0	7.35	0	4.56	0	4.21	0
Feature Type (riffle, run, or pool)	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

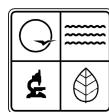
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 13:00	Site Location Description (e.g., road crossing): Kite Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503563	Northing (UTM Y): 4415746	Horizontal Accuracy: (EPE / FOM / PDOP)	17 feet	
Site 11	Easting (UTM X): 0503520	Northing (UTM Y): 4415541	Horizontal Accuracy: (EPE / FOM / PDOP)	26 feet	

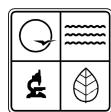
#### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_208	downstream	101_209	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
none

**Substrate\*:** (These values should add up to 100%.)

% Cobble	1% Gravel	50% Sand	% Silt	49% Mud/Clay	% Bedrock

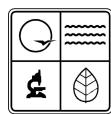
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p style="font-size: 1.5em; margin: 0;">Missouri</p> <p style="font-size: 1.2em; margin: 0;">Department of</p> <p style="font-size: 1.2em; margin: 0;">Natural Resources</p> <p style="font-size: 0.8em; margin: 0;">Estimated Channel Incision: <u>2</u> (in) (height between low bank width and water)</p>	<p style="margin: 0;">Site #: <u>0597_07</u></p> <p style="margin: 0;">GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>503563</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4415746</u></td> <td style="width: 33%; text-align: center;">17 feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>503520</u></td> <td><b>11</b> UTM Y: <u>4415541</u></td> <td style="text-align: center;">26 feet</td> </tr> </table> <p style="margin: 0;">Average Stream Width: <u>5.6</u> (meters) Length of Survey Segment: <u>150</u> (meters)</p> <p style="margin: 0;">(To determine Length of Reach) (20x average stream width)</p> <p style="margin: 0;">Field Staff: <u>JH/JF</u></p>	<b>01</b> UTM X: <u>503563</u>	<b>01</b> UTM Y: <u>4415746</u>	17 feet	<b>11</b> UTM X: <u>503520</u>	<b>11</b> UTM Y: <u>4415541</u>	26 feet	<p style="text-align: center;"><b>Dissolved Oxygen</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Date: <u>9/22/2007</u></td> <td style="width: 50%;">Time: <u>1:00 PM</u></td> </tr> <tr> <td>Dissolved Oxygen: <u>2.5</u> (mg/L)</td> <td></td> </tr> <tr> <td>Dissolved Oxygen: <u>28.1</u> (% sat)</td> <td></td> </tr> <tr> <td>Specific Cond: <u>327.9</u> (µS/cm)</td> <td></td> </tr> <tr> <td>Water Temperature: <u>22.5</u> (°C)</td> <td></td> </tr> </table>	Date: <u>9/22/2007</u>	Time: <u>1:00 PM</u>	Dissolved Oxygen: <u>2.5</u> (mg/L)		Dissolved Oxygen: <u>28.1</u> (% sat)		Specific Cond: <u>327.9</u> (µS/cm)		Water Temperature: <u>22.5</u> (°C)						
<b>01</b> UTM X: <u>503563</u>	<b>01</b> UTM Y: <u>4415746</u>	17 feet																					
<b>11</b> UTM X: <u>503520</u>	<b>11</b> UTM Y: <u>4415541</u>	26 feet																					
Date: <u>9/22/2007</u>	Time: <u>1:00 PM</u>																						
Dissolved Oxygen: <u>2.5</u> (mg/L)																							
Dissolved Oxygen: <u>28.1</u> (% sat)																							
Specific Cond: <u>327.9</u> (µS/cm)																							
Water Temperature: <u>22.5</u> (°C)																							
<b>Transect Cross-Section</b>																							
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.80	0.13	0.83	0.06	0.85	0.42	0.75	0.38	0.88	0.19	0.69	0.04	0.20	0.01	0.22	0.08	0.15	0	0.40	0.02	0.42	0.12	
2	1.60	0.19	1.66	0.07	1.70	0.46	1.50	0.36	1.76	0.21	1.38	0.08	0.40	0.04	0.44	0.13	0.30	0	0.80	0.07	0.84	0.28	
3	2.40	0.14	2.49	0.14	2.55	0.34	2.25	0.22	2.64	0.21	2.07	0.08	0.60	0.05	0.66	0.15	0.45	0	1.20	0.12	1.26	0.34	
4	3.20	0.10	3.32	0.28	3.40	0.26	3.00	0.18	3.52	0.18	2.76	0.13	0.80	0.08	0.88	0.19	0.60	0	1.60	0.17	1.68	0.30	
5	4.00	0.08	4.15	0.42	4.25	0.21	3.75	0.13	4.40	0.19	3.45	0.21	1.00	0.10	1.10	0.19	0.75	0	2.00	0.21	2.10	0.29	
6	4.80	0.12	4.98	0.45	5.10	0.16	4.50	0.11	5.28	0.17	4.14	0.25	1.20	0.12	1.32	0.21	0.90	0	2.40	0.22	2.52	0.31	
7	5.60	0.20	5.81	0.46	5.95	0.17	5.25	0.04	6.16	0.21	4.83	0.27	1.40	0.11	1.54	0.21	1.05	0	8.80	0.23	2.94	0.26	
8	6.40	0.30	6.64	0.41	6.80	0.20	6.00	0.01	7.04	0.22	5.52	0.29	1.60	0.05	1.76	0.13	1.20	0	3.20	0.14	3.36	0.22	
9	7.20	0.44	7.47	0.26	7.65	0.11	6.75	0.01	7.92	0.21	6.21	0.22	1.80	0.02	1.98	0.08	1.35	0	3.60	0.09	3.78	0.07	
<b>Right Bank</b>	8.05	0	8.37	0	8.5	0	7.6	0	8.83	0	6.9	0	2.07	0	2.23	0	1.5	0	4.02	0	4.27	0	
<b>Feature Type</b> (riffle, run, or pool)	Pool	pool	pool	pool	pool	pool	pool	pool	pool	run	pool	dry	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

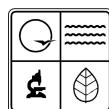
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 13:40	Site Location Description (e.g., road crossing): Lemay Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503431	Northing (UTM Y): 4412471	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet	
Site 11	Easting (UTM X): 0503357	Northing (UTM Y): 4412353	Horizontal Accuracy: (EPE / FOM / PDOP)	15 feet	

### Photos:

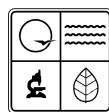
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_211	downstream	101_212	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
none

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	60% Sand	% Silt	40% Mud/Clay	% Bedrock

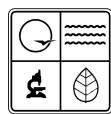
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

none

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Transects 3-11 were too deep to get in and banks were too steep to get to water. It is our opinion that the water depth at each of these transects was > 1 meter.

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  <p>Missouri Department of Natural Resources</p> <p>Waterbody ID: 597 Estimated Channel Width: 18.5 ft (width between low bank width and water)</p> </div> <p>Site #: 0597_08</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: 0503431</td> <td style="width: 33%;"><b>UTM Y:</b> 4412471</td> <td style="width: 33%;"><b>19</b> (meters)</td> </tr> <tr> <td><b>11</b> UTM X: 0503357</td> <td>UTM Y: 4412353</td> <td>15 (meters)</td> </tr> </table> <p>Average Stream Width: 9.5 (meters) Length of Survey Segment: 190 (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: JH/JF</p>	<b>01</b> UTM X: 0503431	<b>UTM Y:</b> 4412471	<b>19</b> (meters)	<b>11</b> UTM X: 0503357	UTM Y: 4412353	15 (meters)	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>Dissolved Oxygen</b></p> </div> <p>Date: 9/22/2007 Time: 1:40 PM</p> <p>Dissolved Oxygen: 2.16 (mg/L)</p> <p>Dissolved Oxygen: 24.8 (% sat)</p> <p>Specific Cond: 201.2 (µS/cm)</p> <p>Water Temperature: 23.6 (°C)</p> <p>* Transects 3-11, slopes were too steep to approach water and/or water too deep to enter. Our opinion is that depths are &gt;1 m.</p>															
<b>01</b> UTM X: 0503431	<b>UTM Y:</b> 4412471	<b>19</b> (meters)																				
<b>11</b> UTM X: 0503357	UTM Y: 4412353	15 (meters)																				
<b>Transect Cross-Section</b>																						
Station	<b>01</b>		<b>02</b>		<b>03*</b>		<b>04*</b>		<b>05*</b>		<b>06*</b>		<b>07*</b>		<b>08*</b>		<b>09*</b>		<b>10*</b>		<b>11*</b>	
<b>Left Bank</b>	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0.89	0.27	0.84	0.26	0.90		0.95		0.85		1.00		0.95		1.20		1.10		0.95		0.80	
3	1.78	0.31	1.68	0.59	1.80		1.90		1.70		2.00		1.90		2.40		2.20		1.90		1.60	
4	2.68	0.28	2.52	1.00	2.70		2.85		2.55		3.00		2.85		3.60		3.30		2.85		2.40	
5	3.56	0.33	3.36	>1	3.60		3.80		3.40		4.00		3.80		4.80		4.40		3.80		3.20	
6	4.45	0.40	4.20	>1	4.50		4.75		4.25		5.00		4.75		6.00		5.50		4.75		4.00	
7	5.34	0.54	5.04	>1	5.40		5.70		5.10		6.00		5.70		7.20		6.60		5.70		4.80	
8	6.23	0.87	5.88	0.92	6.30		6.65		5.95		7.00		6.65		8.40		7.70		6.50		5.60	
9	7.12	0.96	6.72	0.75	7.20		7.60		6.80		8.00		7.00		9.60		8.80		7.60		6.40	
<b>Right Bank</b>	8.01	0.51	7.56	0.21	8.10		8.55		7.65		9.00		8.55		10.80		9.90		8.55		7.20	
<b>Feature Type</b>	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool			
(riffle, run, or pool)																						

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

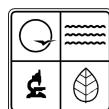
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 14:15	Site Location Description (e.g., road crossing): London Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503087	Northing (UTM Y): 4411282	Horizontal Accuracy: (EPE / FOM / PDOP)	20 feet	
Site 11	Easting (UTM X): 0503229	Northing (UTM Y): 4411064	Horizontal Accuracy: (EPE / FOM / PDOP)	29 feet	

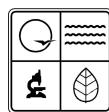
### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_213	downstream	101_214	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
none

**Substrate\*:** (These values should add up to 100%.)

20% Cobble	5% Gravel	30% Sand	% Silt	25% Mud/Clay	20% Bedrock
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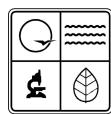
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Duckweed  
Algae

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**

**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions

Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: 0597_9</p> <p>Estimated Channel Incision: 3.5 (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33.33%;">01 UTM X: 0503087</td> <td style="width: 33.33%;">UTM Y: 4411282</td> <td style="width: 33.33%;">20 feet</td> </tr> <tr> <td>11 UTM X: 0503229</td> <td>UTM Y: 4411064</td> <td>29 feet</td> </tr> </table> <p>Average Stream Width: 6.5 (meters) Length of Survey Segment: 150 (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: JH/JF</p>	01 UTM X: 0503087	UTM Y: 4411282	20 feet	11 UTM X: 0503229	UTM Y: 4411064	29 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: 9/22/2007 Time: 2:15 PM</p> <p>Dissolved Oxygen: 2.42 (mg/L)</p> <p>Dissolved Oxygen: 28.8 (% sat)</p> <p>Specific Cond: 398.3 (µS/cm)</p> <p>Water Temperature: 24.1 (°C)</p>																																																																																																																																																																																																																																																																																																																							
01 UTM X: 0503087	UTM Y: 4411282	20 feet																																																																																																																																																																																																																																																																																																																													
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<p><b>Transect Cross-Section</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">01</th> <th colspan="2">02</th> <th colspan="2">03</th> <th colspan="2">04</th> <th colspan="2">05</th> <th colspan="2">06</th> <th colspan="2">07</th> <th colspan="2">08</th> <th colspan="2">09</th> <th colspan="2">10</th> <th colspan="2">11</th> </tr> <tr> <th>Station</th> <th>Left Bank</th> <th>Distance (m)</th> <th>Depth (m)</th> </tr> </thead> <tbody> <tr> <td></td> <td><b>0</b></td> <td>0</td> </tr> <tr> <td>1</td> <td>0.59</td> <td>0.07</td> <td>0.78</td> <td>0.21</td> <td>0.70</td> <td>0.01</td> <td>0.56</td> <td>0.01</td> <td>0.42</td> <td>0.14</td> <td>0.70</td> <td>0.21</td> <td>0.81</td> <td>0.03</td> <td>0.94</td> <td>0.12</td> <td>0.55</td> <td>0.04</td> <td>0.60</td> <td>0.01</td> <td>0.61</td> <td>0.01</td> </tr> <tr> <td>2</td> <td>1.18</td> <td>0.19</td> <td>1.56</td> <td>0.20</td> <td>1.40</td> <td>0.01</td> <td>1.12</td> <td>0.01</td> <td>0.84</td> <td>0.20</td> <td>1.40</td> <td>0.61</td> <td>1.62</td> <td>0.11</td> <td>1.88</td> <td>0.31</td> <td>1.10</td> <td>0.09</td> <td>1.20</td> <td>0.01</td> <td>1.22</td> <td>0.04</td> </tr> <tr> <td>3</td> <td>1.77</td> <td>0.25</td> <td>2.34</td> <td>0.26</td> <td>2.10</td> <td>0.13</td> <td>1.68</td> <td>0.07</td> <td>1.26</td> <td>0.19</td> <td>2.10</td> <td>&gt;1</td> <td>2.43</td> <td>0.17</td> <td>2.82</td> <td>0.44</td> <td>1.65</td> <td>0.12</td> <td>1.80</td> <td>0.10</td> <td>1.83</td> <td>0.06</td> </tr> <tr> <td>4</td> <td>2.36</td> <td>0.41</td> <td>3.12</td> <td>0.24</td> <td>2.80</td> <td>0.00</td> <td>2.24</td> <td>0.05</td> <td>1.68</td> <td>0.05</td> <td>2.80</td> <td>&gt;1</td> <td>3.24</td> <td>0.22</td> <td>3.76</td> <td>0.46</td> <td>2.20</td> <td>0.25</td> <td>2.40</td> <td>0.07</td> <td>2.44</td> <td>0.09</td> </tr> <tr> <td>5</td> <td>2.95</td> <td>0.34</td> <td>3.90</td> <td>0.20</td> <td>3.50</td> <td>0.18</td> <td>2.80</td> <td>0.00</td> <td>2.10</td> <td>0.10</td> <td>3.50</td> <td>&gt;1</td> <td>4.05</td> <td>0.22</td> <td>4.70</td> <td>0.43</td> <td>2.75</td> <td>0.28</td> <td>3.00</td> <td>0.11</td> <td>3.05</td> <td>0.07</td> </tr> <tr> <td>6</td> <td>3.54</td> <td>0.24</td> <td>4.68</td> <td>0.13</td> <td>4.20</td> <td>0.04</td> <td>3.36</td> <td>0.00</td> <td>2.52</td> <td>0.06</td> <td>4.20</td> <td>0.91</td> <td>4.86</td> <td>0.19</td> <td>5.54</td> <td>0.46</td> <td>3.30</td> <td>0.25</td> <td>3.60</td> <td>0.18</td> <td>3.66</td> <td>0.05</td> </tr> <tr> <td>7</td> <td>4.13</td> <td>0.13</td> <td>5.46</td> <td>0.13</td> <td>4.90</td> <td>0.00</td> <td>3.92</td> <td>0.01</td> <td>2.94</td> <td>0.13</td> <td>4.90</td> <td>0.40</td> <td>5.67</td> <td>0.14</td> <td>6.58</td> <td>0.58</td> <td>3.85</td> <td>0.28</td> <td>4.20</td> <td>0.34</td> <td>4.27</td> <td>0.05</td> </tr> <tr> <td>8</td> <td>4.72</td> <td>0.01</td> <td>6.24</td> <td>0.12</td> <td>5.60</td> <td>0.05</td> <td>4.48</td> <td>0.01</td> 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(m)		<b>0</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.59	0.07	0.78	0.21	0.70	0.01	0.56	0.01	0.42	0.14	0.70	0.21	0.81	0.03	0.94	0.12	0.55	0.04	0.60	0.01	0.61	0.01	2	1.18	0.19	1.56	0.20	1.40	0.01	1.12	0.01	0.84	0.20	1.40	0.61	1.62	0.11	1.88	0.31	1.10	0.09	1.20	0.01	1.22	0.04	3	1.77	0.25	2.34	0.26	2.10	0.13	1.68	0.07	1.26	0.19	2.10	>1	2.43	0.17	2.82	0.44	1.65	0.12	1.80	0.10	1.83	0.06	4	2.36	0.41	3.12	0.24	2.80	0.00	2.24	0.05	1.68	0.05	2.80	>1	3.24	0.22	3.76	0.46	2.20	0.25	2.40	0.07	2.44	0.09	5	2.95	0.34	3.90	0.20	3.50	0.18	2.80	0.00	2.10	0.10	3.50	>1	4.05	0.22	4.70	0.43	2.75	0.28	3.00	0.11	3.05	0.07	6	3.54	0.24	4.68	0.13	4.20	0.04	3.36	0.00	2.52	0.06	4.20	0.91	4.86	0.19	5.54	0.46	3.30	0.25	3.60	0.18	3.66	0.05	7	4.13	0.13	5.46	0.13	4.90	0.00	3.92	0.01	2.94	0.13	4.90	0.40	5.67	0.14	6.58	0.58	3.85	0.28	4.20	0.34	4.27	0.05	8	4.72	0.01	6.24	0.12	5.60	0.05	4.48	0.01	3.36	0.10	5.60	0.16	6.48	0.07	7.52	0.61	4.40	0.20	4.80	0.39	4.88	0.04	9	5.31	0.12	7.02	0.29	6.30	0.01	5.04	0.04	3.78	0.10	6.30	0.04	7.29	0.01	8.46	0.51	4.95	0.11	5.40	0.25	5.49	0.06	<b>Right 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**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

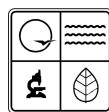
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 15:15	Site Location Description (e.g., road crossing): Landor Rd.- road ends 100 feet before stream, bridge out
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear/rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503372	Northing (UTM Y): 4409644	Horizontal Accuracy: (EPE / FOM / PDOP)	17 feet	
Site 11	Easting (UTM X): 0503249	Northing (UTM Y): 4409436	Horizontal Accuracy: (EPE / FOM / PDOP)	16 feet	

#### Photos:

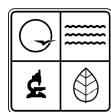
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_215	upstream	101_216	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
none

**Substrate\*:** (These values should add up to 100%.)

5% Cobble	% Gravel	30% Sand	% Silt	65% Mud/Clay	% Bedrock
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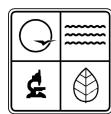
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae  
Water primrose

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07  
 Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_10</u></p> <p>Estimated Channel Incision: <u>2</u> (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>0503372</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4409644</u></td> <td style="width: 33%; text-align: center;">17 feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>0503249</u></td> <td><b>11</b> UTM Y: <u>4409436</u></td> <td style="text-align: center;">16 feet</td> </tr> </table> <p>Average Stream Width: <u>13</u> (meters) Length of Survey Segment: <u>260</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/JF</u></p>	<b>01</b> UTM X: <u>0503372</u>	<b>01</b> UTM Y: <u>4409644</u>	17 feet	<b>11</b> UTM X: <u>0503249</u>	<b>11</b> UTM Y: <u>4409436</u>	16 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>3:15 PM</u></p> <p>Dissolved Oxygen: <u>2.33</u> (mg/L)</p> <p>Dissolved Oxygen: <u>31.2</u> (% sat)</p> <p>Specific Cond: <u>377.9</u> (µS/cm)</p> <p>Water Temperature: <u>28.4</u> (°C)</p>														
<b>01</b> UTM X: <u>0503372</u>	<b>01</b> UTM Y: <u>4409644</u>	17 feet																				
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<b>Transect Cross-Section</b>																						
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.40	0.25	1.60	0.30	1.50	0.17	1.50	0.09	1.60	0.26	1.50	0.25	0.90	0.05	1.00	0.33	1.10	0.21	0.91	0.10	0.70	0.07
2	2.80	0.22	3.20	0.32	3.00	0.15	3.00	0.15	3.20	0.23	3.00	0.50	1.80	0.15	2.00	0.51	2.20	0.39	1.82	0.24	1.40	0.16
3	4.20	0.29	4.80	0.47	4.50	0.27	4.50	0.24	4.80	0.29	4.50	0.22	2.70	0.14	3.00	0.75	3.30	0.50	2.73	0.36	2.10	0.50
4	5.60	0.37	6.40	0.40	6.00	0.38	6.00	0.25	6.40	0.29	6.00	0.33	3.60	0.15	4.00	0.81	4.40	0.63	3.64	0.39	2.80	0.60
5	7.00	0.32	8.00	0.38	7.50	0.49	7.50	0.40	8.00	0.36	7.50	0.58	4.50	0.60	5.00	0.90	5.50	0.64	4.55	0.37	3.50	0.61
6	8.40	0.45	9.60	0.34	9.00	0.75	9.00	0.47	9.60	0.45	9.00	0.70	5.40	0.63	6.00	0.71	6.60	0.80	5.46	0.34	4.20	0.51
7	9.80	0.41	11.20	0.44	10.50	0.88	10.50	0.39	11.20	0.55	10.50	0.87	6.30	0.72	7.00	0.52	7.70	0.93	6.37	0.23	4.90	0.57
8	11.20	0.35	12.80	0.61	12.00	>1	12.00	0.45	12.80	0.65	12.00	0.76	7.20	0.76	8.00	0.31	8.80	0.85	7.28	0.12	5.60	0.44
9	12.60	0.19	14.40	>1	13.50	0.62	13.50	0.81	14.40	0.79	13.50	0.34	8.10	0.74	9.00	0.12	9.90	0.40	8.19	0.08	6.30	0.25
<b>Right Bank</b>	14.3	0	16	0	15.3	0	15.0	0	16	0	15	0	90	0	10	0	11	0	9.6	0	7	0.2
<b>Feature Type</b> (riffle, run, or pool)	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

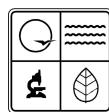
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**

**Data Sheet B – Site Characterization**

(must be completed for each site)

Date & Time: 9/22/07 16:30	Site Location Description (e.g., road crossing): Kiowa Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear/rain	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0503042	Northing (UTM Y): 4408313	Horizontal Accuracy: (EPE / FOM / PDOP)	16 feet
Site 11	Easting (UTM X): 0503026	Northing (UTM Y): 4408096	Horizontal Accuracy: (EPE / FOM / PDOP)	19 feet

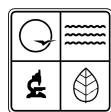
**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_217	downstream	101_218	upstream	101_219	No trespass sign
<hr/>					
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<hr/>					
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<hr/>					

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
none

**Substrate\*:** (These values should add up to 100%.)

1% Cobble	1% Gravel	75% Sand	% Silt	23% Mud/Clay	% Bedrock
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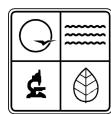
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Algae  
 Water primrose  
 Duckweed  
 Willows

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: 0597_11</p> <p>Estimated Channel Incision: 2 (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33.33%;">01 UTM X: 0503042</td> <td style="width: 33.33%;">UTM Y: 4408313</td> <td style="width: 33.33%;">16 feet</td> </tr> <tr> <td>11 UTM X: 0503026</td> <td>UTM Y: 4408096</td> <td>19 feet</td> </tr> </table> <p>Average Stream Width: 7.5 (meters) Length of Survey Segment: 150 (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: JH/TH</p>	01 UTM X: 0503042	UTM Y: 4408313	16 feet	11 UTM X: 0503026	UTM Y: 4408096	19 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: 9/22/2007 Time: 4:30 PM</p> <p>Dissolved Oxygen: 2.4 (mg/L)</p> <p>Dissolved Oxygen: 29.6 (% sat)</p> <p>Specific Cond: 454.8 (µS/cm)</p> <p>Water Temperature: 27.2 (°C)</p>																																																																																																																																																																																																																																																																																																																								
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<p><b>Transect Cross-Section</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">01</th> <th colspan="2">02</th> <th colspan="2">03</th> <th colspan="2">04</th> <th colspan="2">05</th> <th colspan="2">06</th> <th colspan="2">07</th> <th colspan="2">08</th> <th colspan="2">09</th> <th colspan="2">10</th> <th colspan="2">11</th> </tr> <tr> <th>Station</th> <th>Left Bank</th> <th>Distance (m)</th> <th>Depth (m)</th> </tr> </thead> <tbody> <tr> <td></td> <td><b>0</b></td> <td>0</td> </tr> <tr> <td>1</td> <td>1.22</td> <td>0.14</td> <td>1.68</td> <td>0.30</td> <td>0.98</td> <td>0.14</td> <td>0.65</td> <td>0.18</td> <td>0.70</td> <td>0.05</td> <td>1.50</td> <td>0.33</td> <td>0.98</td> <td>0.19</td> <td>0.84</td> <td>0.39</td> <td>0.51</td> <td>0.06</td> <td>0.65</td> <td>0.02</td> <td>0.17</td> <td>0.02</td> </tr> <tr> <td>2</td> <td>2.44</td> <td>0.23</td> <td>3.36</td> <td>0.32</td> <td>1.96</td> <td>0.31</td> <td>1.30</td> <td>0.25</td> <td>1.40</td> <td>0.16</td> <td>3.00</td> <td>0.26</td> <td>1.96</td> <td>0.21</td> <td>1.68</td> <td>0.59</td> <td>1.02</td> <td>0.05</td> <td>1.30</td> <td>0.07</td> <td>0.34</td> <td>0.00</td> </tr> <tr> <td>3</td> <td>3.66</td> <td>0.28</td> <td>5.04</td> <td>0.37</td> <td>2.94</td> <td>0.22</td> <td>1.95</td> <td>0.26</td> <td>2.10</td> <td>0.25</td> <td>4.50</td> <td>0.32</td> <td>2.94</td> <td>0.28</td> <td>2.52</td> <td>0.60</td> <td>1.53</td> <td>0.11</td> <td>1.95</td> <td>0.01</td> <td>0.51</td> <td>0.00</td> </tr> <tr> <td>4</td> <td>4.88</td> <td>0.38</td> <td>6.72</td> <td>0.47</td> <td>3.92</td> <td>0.42</td> <td>2.60</td> <td>0.39</td> <td>2.80</td> <td>0.25</td> <td>6.00</td> <td>0.26</td> <td>3.92</td> <td>0.28</td> <td>3.36</td> <td>0.49</td> <td>2.04</td> <td>0.08</td> <td>2.60</td> <td>0.00</td> <td>0.68</td> <td>0.01</td> </tr> <tr> <td>5</td> <td>6.10</td> <td>0.35</td> <td>8.40</td> <td>0.60</td> <td>4.90</td> <td>0.66</td> <td>3.25</td> <td>0.25</td> <td>3.50</td> <td>0.30</td> <td>7.50</td> <td>0.26</td> <td>4.90</td> <td>0.30</td> <td>4.20</td> <td>0.44</td> <td>2.55</td> <td>0.04</td> <td>3.25</td> <td>0.09</td> <td>0.85</td> <td>0.03</td> </tr> <tr> <td>6</td> <td>7.32</td> <td>0.45</td> <td>10.08</td> <td>0.81</td> <td>5.88</td> <td>0.91</td> <td>3.90</td> <td>0.45</td> <td>4.20</td> <td>0.49</td> <td>9.00</td> <td>0.28</td> <td>5.88</td> <td>0.32</td> <td>5.04</td> <td>0.35</td> <td>3.06</td> <td>0.02</td> <td>3.90</td> <td>0.25</td> <td>1.02</td> <td>0.03</td> </tr> <tr> <td>7</td> <td>8.54</td> <td>0.60</td> <td>11.76</td> <td>0.82</td> <td>6.86</td> <td>&gt;1</td> <td>4.55</td> <td>0.57</td> <td>4.90</td> <td>0.71</td> <td>10.50</td> <td>0.33</td> <td>6.86</td> <td>0.30</td> <td>5.88</td> <td>0.30</td> <td>3.57</td> <td>0.10</td> <td>4.55</td> <td>0.38</td> <td>1.19</td> <td>0.01</td> </tr> <tr> <td>8</td> <td>9.76</td> <td>0.81</td> <td>13.44</td> <td>&gt;1</td> <td>7.84</td> <td>&gt;1</td> <td>5.20</td> <td>0.48</td> 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(m)		<b>0</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.22	0.14	1.68	0.30	0.98	0.14	0.65	0.18	0.70	0.05	1.50	0.33	0.98	0.19	0.84	0.39	0.51	0.06	0.65	0.02	0.17	0.02	2	2.44	0.23	3.36	0.32	1.96	0.31	1.30	0.25	1.40	0.16	3.00	0.26	1.96	0.21	1.68	0.59	1.02	0.05	1.30	0.07	0.34	0.00	3	3.66	0.28	5.04	0.37	2.94	0.22	1.95	0.26	2.10	0.25	4.50	0.32	2.94	0.28	2.52	0.60	1.53	0.11	1.95	0.01	0.51	0.00	4	4.88	0.38	6.72	0.47	3.92	0.42	2.60	0.39	2.80	0.25	6.00	0.26	3.92	0.28	3.36	0.49	2.04	0.08	2.60	0.00	0.68	0.01	5	6.10	0.35	8.40	0.60	4.90	0.66	3.25	0.25	3.50	0.30	7.50	0.26	4.90	0.30	4.20	0.44	2.55	0.04	3.25	0.09	0.85	0.03	6	7.32	0.45	10.08	0.81	5.88	0.91	3.90	0.45	4.20	0.49	9.00	0.28	5.88	0.32	5.04	0.35	3.06	0.02	3.90	0.25	1.02	0.03	7	8.54	0.60	11.76	0.82	6.86	>1	4.55	0.57	4.90	0.71	10.50	0.33	6.86	0.30	5.88	0.30	3.57	0.10	4.55	0.38	1.19	0.01	8	9.76	0.81	13.44	>1	7.84	>1	5.20	0.48	5.60	0.84	12.00	0.40	7.84	0.27	6.72	0.26	4.08	0.11	5.20	0.37	1.36	0.01	9	10.98	>1	15.12	>1	8.82	>1	5.85	0.31	6.30	0.80	13.50	0.35	8.82	0.13	7.56	0.09	4.59	0.03	5.85	0.12	1.53	0.01	Right 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6	7.32	0.45	10.08	0.81	5.88	0.91	3.90	0.45	4.20	0.49	9.00	0.28	5.88	0.32	5.04	0.35	3.06	0.02	3.90	0.25	1.02	0.03																																																																																																																																																																																																																																																																																																										
7	8.54	0.60	11.76	0.82	6.86	>1	4.55	0.57	4.90	0.71	10.50	0.33	6.86	0.30	5.88	0.30	3.57	0.10	4.55	0.38	1.19	0.01																																																																																																																																																																																																																																																																																																										
8	9.76	0.81	13.44	>1	7.84	>1	5.20	0.48	5.60	0.84	12.00	0.40	7.84	0.27	6.72	0.26	4.08	0.11	5.20	0.37	1.36	0.01																																																																																																																																																																																																																																																																																																										
9	10.98	>1	15.12	>1	8.82	>1	5.85	0.31	6.30	0.80	13.50	0.35	8.82	0.13	7.56	0.09	4.59	0.03	5.85	0.12	1.53	0.01																																																																																																																																																																																																																																																																																																										
Right Bank	12.2	0	16.8	0	9.84	0	0.65	0	7	0	15	0	9.84	0	8.42	0	5.15	0	6.5	0	1.7	0																																																																																																																																																																																																																																																																																																										
Feature Type (riffle, run, or pool)	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	pool	rum																																																																																																																																																																																																																																																																																																														

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

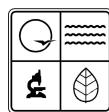
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 07:00	Site Location Description (e.g., road crossing): Kayak Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0502909	Northing (UTM Y): 4405238	Horizontal Accuracy: (EPE / FOM / PDOP)	17 feet
Site 11	Easting (UTM X): 0503080	Northing (UTM Y): 4405046	Horizontal Accuracy: (EPE / FOM / PDOP)	14 feet

#### Photos:

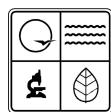
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
634	Site 12 upstream	635	Downstream site 12		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:

## Comments:

Farmland, gravel roads

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	50% Sand	% Silt	% Mud/Clay	50% Bedrock
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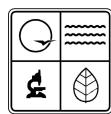
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Small amounts of algae.  
 Aquatic vegetation on sand bars.

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**

**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_12</u></p> <p>Estimated Channel Incision: <u>3</u> (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>0502909</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4405238</u></td> <td style="width: 33%; text-align: right;"><u>17</u> feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>0503080</u></td> <td><b>11</b> UTM Y: <u>4405046</u></td> <td style="text-align: right;"><u>14</u> feet</td> </tr> </table> <p>Average Stream Width: <u>10</u> (meters)      Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach)      (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	<b>01</b> UTM X: <u>0502909</u>	<b>01</b> UTM Y: <u>4405238</u>	<u>17</u> feet	<b>11</b> UTM X: <u>0503080</u>	<b>11</b> UTM Y: <u>4405046</u>	<u>14</u> feet	<p><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>7:30 AM</u></p> <p>Dissolved Oxygen: <u>5.58</u> (mg/L)</p> <p>Dissolved Oxygen: <u>63.2</u> (% sat)</p> <p>Specific Cond: <u>383</u> (µS/cm)</p> <p>Water Temperature: <u>21</u> (°C)</p>																																																																																																																																																																																																																																																																																																		
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<p><b>Transect Cross-Section</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"><b>01</b></th> <th colspan="2"><b>02</b></th> <th colspan="2"><b>03</b></th> <th colspan="2"><b>04</b></th> <th colspan="2"><b>05</b></th> <th colspan="2"><b>06</b></th> <th colspan="2"><b>07</b></th> <th colspan="2"><b>08</b></th> <th colspan="2"><b>09</b></th> <th colspan="2"><b>10</b></th> <th colspan="2"><b>11</b></th> </tr> <tr> <th>Station</th> <th>Left Bank</th> <th>Distance (m)</th> <th>Depth (m)</th> </tr> </thead> <tbody> <tr> <td></td> <td><b>01</b></td> <td>0</td> </tr> <tr> <td></td> <td><b>02</b></td> <td>1.30</td> <td>0.26</td> <td>1.50</td> <td>0.15</td> <td>1.50</td> <td>0.12</td> <td>1.50</td> <td>0.16</td> <td>0.40</td> <td>0.01</td> <td>0.40</td> <td>0.08</td> <td>0.55</td> <td>0.03</td> <td>0.25</td> <td>&lt;.01</td> <td>0.35</td> <td>0.06</td> <td>0.40</td> <td>0.02</td> <td>0.32</td> </tr> <tr> <td></td> <td><b>03</b></td> <td>2.60</td> <td>0.17</td> <td>3.00</td> <td>0.09</td> <td>3.00</td> <td>0.05</td> <td>3.00</td> <td>0.10</td> <td>0.80</td> <td>0.01</td> <td>8.00</td> <td>0.04</td> <td>1.10</td> <td>0.00</td> <td>0.50</td> <td>0.01</td> <td>0.70</td> <td>0.07</td> <td>0.80</td> <td>0.01</td> <td>0.64</td> </tr> <tr> <td></td> <td><b>04</b></td> <td>3.90</td> <td>0.21</td> <td>4.50</td> <td>0.16</td> <td>4.50</td> <td>0.19</td> <td>4.50</td> <td>0.14</td> <td>1.20</td> <td>0.03</td> <td>1.20</td> <td>0.04</td> <td>1.65</td> <td>0.04</td> <td>0.75</td> <td>0.02</td> <td>1.05</td> <td>0.07</td> <td>1.20</td> <td>0.03</td> <td>0.96</td> </tr> <tr> <td></td> <td><b>05</b></td> <td>5.20</td> <td>0.38</td> <td>6.00</td> <td>0.14</td> <td>6.00</td> <td>0.12</td> <td>6.00</td> <td>0.19</td> <td>1.60</td> <td>0.05</td> <td>1.60</td> <td>0.01</td> <td>2.20</td> <td>0.02</td> <td>1.00</td> <td>0.04</td> <td>1.40</td> <td>0.08</td> <td>1.60</td> <td>0.02</td> <td>1.28</td> </tr> <tr> <td></td> <td><b>06</b></td> <td>6.50</td> <td>0.26</td> <td>7.50</td> <td>0.15</td> <td>7.50</td> <td>0.13</td> <td>7.50</td> <td>0.20</td> <td>2.00</td> <td>0.06</td> <td>2.00</td> <td>0.00</td> <td>2.75</td> <td>0.08</td> <td>1.25</td> <td>0.01</td> <td>1.75</td> <td>0.10</td> <td>2.00</td> <td>0.01</td> <td>1.60</td> </tr> <tr> <td></td> <td><b>07</b></td> <td>7.80</td> <td>0.20</td> <td>9.00</td> <td>0.14</td> <td>9.00</td> <td>0.20</td> <td>9.00</td> <td>0.22</td> <td>2.40</td> <td>0.01</td> <td>2.40</td> <td>0.00</td> <td>3.30</td> <td>0.00</td> <td>1.50</td> <td>0.01</td> <td>2.10</td> <td>0.11</td> <td>2.40</td> <td>0.03</td> <td>1.92</td> </tr> <tr> <td></td> <td><b>08</b></td> <td>7.10</td> <td>0.15</td> <td>10.50</td> <td>0.14</td> <td>10.50</td> <td>0.24</td> <td>0.05</td> <td>0.23</td> <td>2.80</td> <td>0.02</td> <td>2.80</td> <td>0.00</td> <td>3.85</td> <td>0.01</td> <td>1.75</td> <td>0.02</td> <td>2.45</td> <td>0.09</td> <td>2.80</td> <td>0.04</td> <td>2.24</td> </tr> <tr> <td></td> <td><b>09</b></td> <td>10.40</td> <td>0.14</td> <td>12.00</td> <td>0.14</td> <td>12.00</td> <td>0.18</td> <td>12.00</td> <td>0.21</td> <td>3.20</td> <td>0.01</td> <td>3.20</td> <td>0.02</td> <td>4.40</td> <td>0.04</td> <td>2.00</td> <td>0.04</td> <td>2.80</td> <td>0.06</td> <td>3.20</td> <td>0.04</td> <td>2.56</td> </tr> <tr> <td></td> <td><b>10</b></td> <td>11.70</td> <td>0.16</td> <td>13.50</td> <td>0.14</td> <td>13.50</td> <td>0.21</td> <td>13.50</td> <td>0.20</td> <td>3.60</td> <td>0.01</td> <td>3.60</td> <td>0.01</td> <td>4.95</td> <td>0.01</td> <td>2.25</td> <td>0.04</td> <td>3.15</td> <td>0.04</td> <td>3.60</td> <td>0.05</td> <td>2.88</td> </tr> <tr> <td></td> <td><b>11</b></td> <td>13.4</td> <td>0</td> <td>15</td> <td>0</td> <td>15.3</td> <td>0</td> <td>15.2</td> <td>0</td> <td>4.1</td> <td>0</td> <td>4.05</td> <td>0</td> <td>5.71</td> <td>0</td> <td>2.71</td> <td>0</td> <td>3.61</td> <td>0</td> <td>4.25</td> <td>0</td> <td>3.25</td> </tr> </tbody> </table>			<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		Station	Left Bank	Distance (m)	Depth (m)		<b>01</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		<b>02</b>	1.30	0.26	1.50	0.15	1.50	0.12	1.50	0.16	0.40	0.01	0.40	0.08	0.55	0.03	0.25	<.01	0.35	0.06	0.40	0.02	0.32		<b>03</b>	2.60	0.17	3.00	0.09	3.00	0.05	3.00	0.10	0.80	0.01	8.00	0.04	1.10	0.00	0.50	0.01	0.70	0.07	0.80	0.01	0.64		<b>04</b>	3.90	0.21	4.50	0.16	4.50	0.19	4.50	0.14	1.20	0.03	1.20	0.04	1.65	0.04	0.75	0.02	1.05	0.07	1.20	0.03	0.96		<b>05</b>	5.20	0.38	6.00	0.14	6.00	0.12	6.00	0.19	1.60	0.05	1.60	0.01	2.20	0.02	1.00	0.04	1.40	0.08	1.60	0.02	1.28		<b>06</b>	6.50	0.26	7.50	0.15	7.50	0.13	7.50	0.20	2.00	0.06	2.00	0.00	2.75	0.08	1.25	0.01	1.75	0.10	2.00	0.01	1.60		<b>07</b>	7.80	0.20	9.00	0.14	9.00	0.20	9.00	0.22	2.40	0.01	2.40	0.00	3.30	0.00	1.50	0.01	2.10	0.11	2.40	0.03	1.92		<b>08</b>	7.10	0.15	10.50	0.14	10.50	0.24	0.05	0.23	2.80	0.02	2.80	0.00	3.85	0.01	1.75	0.02	2.45	0.09	2.80	0.04	2.24		<b>09</b>	10.40	0.14	12.00	0.14	12.00	0.18	12.00	0.21	3.20	0.01	3.20	0.02	4.40	0.04	2.00	0.04	2.80	0.06	3.20	0.04	2.56		<b>10</b>	11.70	0.16	13.50	0.14	13.50	0.21	13.50	0.20	3.60	0.01	3.60	0.01	4.95	0.01	2.25	0.04	3.15	0.04	3.60	0.05	2.88		<b>11</b>	13.4	0	15	0	15.3	0	15.2	0	4.1	0	4.05	0	5.71	0	2.71	0	3.61	0	4.25	0	3.25																		
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	<b>05</b>	5.20	0.38	6.00	0.14	6.00	0.12	6.00	0.19	1.60	0.05	1.60	0.01	2.20	0.02	1.00	0.04	1.40	0.08	1.60	0.02	1.28																																																																																																																																																																																																																																																																																				
	<b>06</b>	6.50	0.26	7.50	0.15	7.50	0.13	7.50	0.20	2.00	0.06	2.00	0.00	2.75	0.08	1.25	0.01	1.75	0.10	2.00	0.01	1.60																																																																																																																																																																																																																																																																																				
	<b>07</b>	7.80	0.20	9.00	0.14	9.00	0.20	9.00	0.22	2.40	0.01	2.40	0.00	3.30	0.00	1.50	0.01	2.10	0.11	2.40	0.03	1.92																																																																																																																																																																																																																																																																																				
	<b>08</b>	7.10	0.15	10.50	0.14	10.50	0.24	0.05	0.23	2.80	0.02	2.80	0.00	3.85	0.01	1.75	0.02	2.45	0.09	2.80	0.04	2.24																																																																																																																																																																																																																																																																																				
	<b>09</b>	10.40	0.14	12.00	0.14	12.00	0.18	12.00	0.21	3.20	0.01	3.20	0.02	4.40	0.04	2.00	0.04	2.80	0.06	3.20	0.04	2.56																																																																																																																																																																																																																																																																																				
	<b>10</b>	11.70	0.16	13.50	0.14	13.50	0.21	13.50	0.20	3.60	0.01	3.60	0.01	4.95	0.01	2.25	0.04	3.15	0.04	3.60	0.05	2.88																																																																																																																																																																																																																																																																																				
	<b>11</b>	13.4	0	15	0	15.3	0	15.2	0	4.1	0	4.05	0	5.71	0	2.71	0	3.61	0	4.25	0	3.25																																																																																																																																																																																																																																																																																				
<p><b>Feature Type</b></p> <p>(riffle, run, or pool)</p>		<p>pool</p>	<p>pool</p>	<p>pool</p>	<p>pool</p>	<p>riffle</p>	<p>riffle</p>	<p>riffle</p>	<p>riffle</p>	<p>run</p>	<p>run</p>	<p>run</p>	<p>run</p>																																																																																																																																																																																																																																																																																													

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

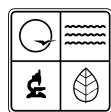
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 08:20	Site Location Description (e.g., road crossing): Konner Rd.- now ends @ soybean field
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503457	Northing (UTM Y): 4403653	Horizontal Accuracy: (EPE / FOM / PDOP)	25 feet	
Site 11	Easting (UTM X): 0503440	Northing (UTM Y): 4403416	Horizontal Accuracy: (EPE / FOM / PDOP)	39 feet	

#### Photos:

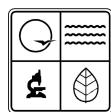
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
636	Site 13 upstream	637	Downstream site 13		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:

## Comments:

Farm fields- corn/soybeans

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:

none

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	100% Sand	% Silt	% Mud/Clay	% Bedrock

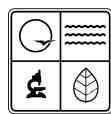
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

20% algae in stream  
 grasses on sandbars, smartweed, willow, barnyard grass

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Estimated Channel Incision: <u>4</u> (in)(height between low bank width and water)</p>	<p>Site #: <u>0597_13</u></p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>0503457</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4403653</u></td> <td style="width: 33%; text-align: right;"><u>25</u> feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>0503440</u></td> <td><b>11</b> UTM Y: <u>4403416</u></td> <td style="text-align: right;"><u>39</u> feet</td> </tr> </table> <p>Average Stream Width: <u>12</u> (meters)      Length of Survey Segment: <u>240</u> (meters) (To determine Length of Reach)      (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	<b>01</b> UTM X: <u>0503457</u>	<b>01</b> UTM Y: <u>4403653</u>	<u>25</u> feet	<b>11</b> UTM X: <u>0503440</u>	<b>11</b> UTM Y: <u>4403416</u>	<u>39</u> feet	<p style="text-align: center;"><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>8:20 AM</u></p> <p>Dissolved Oxygen: <u>7.08</u> (mg/L)</p> <p>Dissolved Oxygen: <u>77.1</u> (% sat)</p> <p>Specific Cond: <u>412.5</u> (µS/cm)</p> <p>Water Temperature: <u>18.6</u> (°C)</p>																																																												
<b>01</b> UTM X: <u>0503457</u>	<b>01</b> UTM Y: <u>4403653</u>	<u>25</u> feet																																																																		
<b>11</b> UTM X: <u>0503440</u>	<b>11</b> UTM Y: <u>4403416</u>	<u>39</u> feet																																																																		
<b>Transect Cross-Section</b>			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"><b>01</b></th> <th colspan="2"><b>02</b></th> <th colspan="2"><b>03</b></th> <th colspan="2"><b>04</b></th> <th colspan="2"><b>05</b></th> <th colspan="2"><b>06</b></th> <th colspan="2"><b>07</b></th> <th colspan="2"><b>08</b></th> <th colspan="2"><b>09</b></th> <th colspan="2"><b>10</b></th> <th colspan="2"><b>11</b></th> </tr> <tr> <th>Distance (m)</th> <th>Depth (m)</th> </tr> </thead> <tbody> <tr> <td>0</td> </tr> </tbody> </table>	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		Distance (m)	Depth (m)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																				
<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>																																																
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)																																															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																
Station																																																																				
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																															
1	0.75	0.14	1.40	0.00	0.80	0.13	0.85	0.13	1.20	0.25	1.15	0.11	1.05	0.09	1.45	0.21	1.05	0.02	0.95	0.09	1.60	0.28																																														
2	1.50	0.16	2.80	<.01	1.60	0.12	1.70	0.14	2.40	0.20	2.30	0.14	2.10	0.25	2.90	0.10	2.10	0.11	1.90	0.20	3.20	0.31																																														
3	2.75	0.14	4.20	0.14	2.40	0.10	2.55	0.12	3.60	0.17	3.45	0.14	3.15	0.22	4.35	0.14	3.15	0.17	2.85	0.24	4.80	0.24																																														
4	3.00	0.14	5.60	0.11	3.20	0.10	3.40	0.14	4.80	0.10	4.60	0.16	4.20	0.18	5.80	0.16	4.20	0.22	3.80	0.30	6.40	0.57																																														
5	3.75	0.09	7.00	0.09	4.00	0.10	4.25	0.15	6.00	0.06	5.75	0.11	5.25	0.16	7.25	0.16	5.25	0.23	4.75	0.35	8.00	0.25																																														
6	4.50	0.02	8.40	0.02	4.80	0.10	5.10	0.13	7.20	0.04	6.90	0.15	6.30	0.17	8.70	0.20	6.30	0.23	5.70	0.41	9.60	0.23																																														
7	5.25	0.00	9.80	0.01	5.60	0.10	5.95	0.10	8.40	0.04	8.50	0.17	7.35	0.21	10.15	0.25	7.35	0.34	6.65	0.52	11.20	0.19																																														
8	6.00	0.00	11.20	0.00	6.40	0.11	6.80	0.09	9.60	0.03	9.20	0.10	8.40	0.41	11.60	0.10	8.40	0.18	7.60	0.70	12.80	0.09																																														
9	6.75	0.06	12.60	0.00	7.20	0.08	7.65	0.04	10.80	0.04	10.35	0.04	9.45	0.11	13.05	0.09	9.45	0.21	8.55	0.45	14.40	0.03																																														
<b>Right Bank</b>	7.9	0	14.31	0	8.1	0	8.7	0	12.1	0	11.8	0	10.5	0	14.6	0	10.5	0	9.65	0	16.4	0																																														
<b>Feature Type</b> (riffle, run, or pool)	pool	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run																																															

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

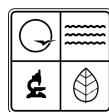
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 09:30	Site Location Description (e.g., road crossing): Hwy. 36
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0501447	Northing (UTM Y): 4401263	Horizontal Accuracy: (EPE / FOM / PDOP)	20 feet	
Site 11	Easting (UTM X): 0501435	Northing (UTM Y): 4401078	Horizontal Accuracy: (EPE / FOM / PDOP)	28 feet	

### Photos:

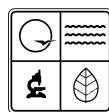
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
638	Downstream site 14	639	upstream site 14	640	Agri-drain T-7
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
641	Agri-drain T-10				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:

Comments:  
Farm fields, Hwy

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
Agri-drains into streams

**Substrate\*:** (These values should add up to 100%.)

% Cobble	5% Gravel	65% Sand	% Silt	30% Mud/Clay	% Bedrock

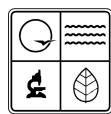
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Aquatic plants in sandbars (willow, smartweed, cardinal flower)

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: none
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**

**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Field Tech

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_14</u></p> <p>Estimated Channel Incision: <u>2.5</u> (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <p><b>01</b> UTM X: <u>0501447</u> UTM Y: <u>4401263</u> <u>20</u> feet</p> <p><b>11</b> UTM X: <u>0501435</u> UTM Y: <u>4401078</u> <u>28</u> feet</p> <p>Average Stream Width: <u>2</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)</p> <p>Field Staff: <u>RM/JF</u></p>	<p><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>9:30 AM</u></p> <p>Dissolved Oxygen: <u>2.74</u> (mg/L)</p> <p>Dissolved Oxygen: <u>20.9</u> (% sat)</p> <p>Specific Cond: <u>236.9</u> (µS/cm)</p> <p>Water Temperature: <u>18.4</u> (°C)</p>																																																																																																																																																																																																																																																																																																																																									
<p><b>Transect Cross-Section</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"><b>01</b></th> <th colspan="2"><b>02</b></th> <th colspan="2"><b>03</b></th> <th colspan="2"><b>04</b></th> <th colspan="2"><b>05</b></th> <th colspan="2"><b>06</b></th> <th colspan="2"><b>07</b></th> <th colspan="2"><b>08</b></th> <th colspan="2"><b>09</b></th> <th colspan="2"><b>10</b></th> <th colspan="2"><b>11</b></th> </tr> <tr> <th>Station</th> <th>Left Bank</th> <th>Distance (m)</th> <th>Depth (m)</th> </tr> </thead> <tbody> <tr> <td></td> <td><b>0</b></td> <td>0</td> </tr> <tr> <td>1</td> <td><b>1</b></td> <td>0.20</td> <td>0.06</td> <td>0.26</td> <td>0</td> <td>0.12</td> <td>0</td> <td>0.25</td> <td>0</td> <td>0.28</td> <td>0</td> <td>0.26</td> <td>0</td> <td>0.21</td> <td>0</td> <td>0.21</td> <td>0</td> <td>0.29</td> <td>0</td> <td>0.24</td> <td>0</td> <td>0.28</td> <td>0</td> </tr> <tr> <td>2</td> <td><b>2</b></td> <td>0.40</td> <td>0.07</td> <td>0.52</td> <td>0</td> <td>0.23</td> <td>0</td> <td>0.50</td> <td>0</td> <td>0.55</td> <td>0</td> <td>0.52</td> <td>0</td> <td>0.42</td> <td>0</td> <td>0.41</td> <td>0</td> <td>0.58</td> <td>0</td> <td>0.48</td> <td>0</td> <td>0.56</td> <td>0</td> </tr> <tr> <td>3</td> <td><b>3</b></td> <td>0.60</td> <td>0.14</td> <td>0.78</td> <td>0</td> <td>0.34</td> <td>0</td> <td>0.75</td> <td>0</td> <td>0.83</td> <td>0</td> <td>0.78</td> <td>0</td> <td>0.63</td> <td>0</td> <td>0.62</td> <td>0</td> <td>0.87</td> <td>0</td> <td>0.72</td> <td>0</td> <td>0.84</td> <td>0</td> </tr> <tr> <td>4</td> <td><b>4</b></td> <td>0.80</td> <td>0.14</td> <td>1.04</td> <td>0</td> <td>0.46</td> <td>0</td> <td>1.00</td> <td>0</td> <td>1.10</td> <td>0</td> <td>1.04</td> <td>0</td> <td>0.84</td> <td>0</td> <td>0.82</td> <td>0</td> <td>1.16</td> <td>0</td> <td>0.96</td> <td>0</td> <td>1.12</td> <td>0</td> </tr> <tr> <td>5</td> <td><b>5</b></td> <td>1.00</td> <td>0.13</td> <td>1.30</td> <td>0</td> <td>0.57</td> <td>0</td> <td>1.25</td> <td>0</td> <td>1.38</td> <td>0</td> <td>1.30</td> <td>0</td> <td>1.05</td> <td>0</td> <td>1.03</td> <td>0</td> <td>1.45</td> <td>0</td> <td>1.20</td> <td>0</td> <td>1.40</td> <td>0</td> </tr> <tr> <td>6</td> <td><b>6</b></td> <td>1.20</td> <td>0.12</td> <td>1.56</td> <td>0</td> <td>0.68</td> <td>0</td> <td>1.50</td> <td>0</td> <td>1.65</td> <td>0</td> <td>1.56</td> <td>0</td> <td>1.26</td> <td>0</td> <td>1.23</td> <td>0</td> <td>1.74</td> <td>0</td> <td>1.44</td> <td>0</td> <td>1.68</td> <td>0</td> </tr> <tr> <td>7</td> <td><b>7</b></td> <td>1.40</td> <td>0.08</td> <td>1.82</td> <td>0</td> <td>0.80</td> <td>0</td> <td>1.75</td> <td>0</td> <td>1.93</td> <td>0</td> <td>1.82</td> <td>0</td> <td>1.47</td> <td>0</td> <td>1.44</td> <td>0</td> <td>2.03</td> <td>0</td> <td>1.68</td> <td>0</td> <td>1.96</td> <td>0</td> </tr> <tr> <td>8</td> <td><b>8</b></td> <td>1.60</td> <td>0.06</td> <td>2.08</td> <td>0</td> <td>0.91</td> <td>0</td> <td>2.00</td> <td>0</td> 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(m)		<b>0</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	<b>1</b>	0.20	0.06	0.26	0	0.12	0	0.25	0	0.28	0	0.26	0	0.21	0	0.21	0	0.29	0	0.24	0	0.28	0	2	<b>2</b>	0.40	0.07	0.52	0	0.23	0	0.50	0	0.55	0	0.52	0	0.42	0	0.41	0	0.58	0	0.48	0	0.56	0	3	<b>3</b>	0.60	0.14	0.78	0	0.34	0	0.75	0	0.83	0	0.78	0	0.63	0	0.62	0	0.87	0	0.72	0	0.84	0	4	<b>4</b>	0.80	0.14	1.04	0	0.46	0	1.00	0	1.10	0	1.04	0	0.84	0	0.82	0	1.16	0	0.96	0	1.12	0	5	<b>5</b>	1.00	0.13	1.30	0	0.57	0	1.25	0	1.38	0	1.30	0	1.05	0	1.03	0	1.45	0	1.20	0	1.40	0	6	<b>6</b>	1.20	0.12	1.56	0	0.68	0	1.50	0	1.65	0	1.56	0	1.26	0	1.23	0	1.74	0	1.44	0	1.68	0	7	<b>7</b>	1.40	0.08	1.82	0	0.80	0	1.75	0	1.93	0	1.82	0	1.47	0	1.44	0	2.03	0	1.68	0	1.96	0	8	<b>8</b>	1.60	0.06	2.08	0	0.91	0	2.00	0	2.20	0	2.08	0	1.68	0	1.64	0	2.32	0	1.92	0	2.24	0	9	<b>9</b>	1.80	0.04	2.34	0	1.02	0	2.25	0	2.48	0	2.34	0	1.89	0	1.85	0	2.61	0	2.16	0	2.52	0		<b>Right Bank</b>	2	0	2.6	0	1.15	0	2.5	0	2.75	0	2.6	0	2.1	0	2.05	0	2.9	0	2.4	0	2.8	0		<b>Feature Type</b>	(riffle, run, or 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**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

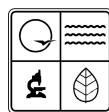
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 10:05	Site Location Description (e.g., road crossing): Kemper Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0500959	Northing (UTM Y): 4400152	Horizontal Accuracy: (EPE / FOM / PDOP)	27 feet
Site 11	Easting (UTM X): 0500788	Northing (UTM Y): 4400022	Horizontal Accuracy: (EPE / FOM / PDOP)	21 feet

#### Photos:

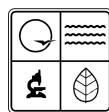
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
642	upstream site 15	643	downstream site 15	644	ATV tracks T-6
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

Farm fields

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input checked="" type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other:				

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	90% Sand	% Silt	10% Mud/Clay	% Bedrock
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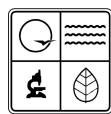
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Some algae-benthic, aquatic plants on sandbars.

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Field Technician

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_15</u></p> <p>Estimated Channel Incision: <u>3</u> (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>0500959</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4400152</u></td> <td style="width: 33%; text-align: right;"><u>27</u> feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>0500788</u></td> <td><b>11</b> UTM Y: <u>4400022</u></td> <td style="text-align: right;"><u>21</u> feet</td> </tr> </table> <p>Average Stream Width: <u>9</u> (meters)      Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach)      (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	<b>01</b> UTM X: <u>0500959</u>	<b>01</b> UTM Y: <u>4400152</u>	<u>27</u> feet	<b>11</b> UTM X: <u>0500788</u>	<b>11</b> UTM Y: <u>4400022</u>	<u>21</u> feet	<p style="text-align: center;"><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>10:05</u></p> <p>Dissolved Oxygen: <u>6.82</u> (mg/L)</p> <p>Dissolved Oxygen: <u>74.2</u> (% sat)</p> <p>Specific Cond: <u>416.4</u> (µS/cm)</p> <p>Water Temperature: <u>20.8</u> (°C)</p>															
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<b>11</b> UTM X: <u>0500788</u>	<b>11</b> UTM Y: <u>4400022</u>	<u>21</u> feet																					
<b>Transect Cross-Section</b>																							
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.16	0.33	1.40	0.10	0.52	0.05	0.48	0.06	0.40	0.02	0.82	0.08	0.15	0.02	0.40	0.10	0.75	0.32	1.36	0.04	0.79	0.11	
2	2.32	0.54	2.80	0.16	1.04	0.04	0.98	0.10	0.80	0.10	1.64	0.12	0.30	0.03	0.80	0.15	1.50	0.60	2.72	0.05	1.58	0.10	
3	3.48	0.32	4.20	0.21	1.56	0.09	1.47	0.15	1.20	0.24	2.46	0.13	0.45	0.02	1.20	0.13	2.25	0.68	4.08	0.05	2.37	0.09	
4	4.64	0.34	5.60	0.17	2.08	0.14	1.96	0.22	1.60	0.33	3.28	0.11	0.60	0.05	1.60	0.10	3.00	0.61	5.44	0.10	3.16	0.10	
5	5.80	0.55	7.00	0.14	2.60	0.14	2.45	0.26	2.00	0.41	4.10	0.07	0.75	0.06	2.00	0.09	3.75	0.52	6.80	0.21	3.95	0.09	
6	6.90	0.58	8.40	0.06	3.12	0.17	2.94	0.31	2.40	0.68	4.92	0.00	0.90	0.07	2.40	0.07	4.50	0.42	8.16	0.18	4.74	0.08	
7	8.12	0.55	9.80	0.17	3.64	0.16	3.43	0.38	2.80	0.64	5.74	0.16	1.05	0.07	2.80	0.04	5.25	0.36	9.52	0.24	5.53	0.08	
8	9.28	0.46	11.20	0.06	4.16	0.13	3.92	0.46	3.20	0.52	6.56	0.35	1.20	0.06	3.20	0.04	6.00	0.28	10.88	0.27	6.32	0.09	
9	10.44	0.40	12.60	0.06	4.68	0.07	4.41	0.55	3.60	0.25	7.38	0.34	1.35	0.05	3.60	0.02	6.75	0.19	12.24	0.26	7.11	0.06	
<b>Right Bank</b>	11.61	0	14.05	0	5.25	0	4.9	0.4	4	0.15	8.2	0.05	1.51	0	4.05	0	7.9	0	13.61	0	7.9	0	
<b>Feature Type</b> (riffle, run, or pool)	pool	pool	run	run	run/pool	pool	run	run	run	run	run	run	run	run	run	run	run/pool	pool					

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

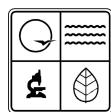
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 11:30	Site Location Description (e.g., road crossing): Julep Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0499456	Northing (UTM Y): 4398847	Horizontal Accuracy: (EPE / FOM / PDOP)	15 feet
Site 11	Easting (UTM X): 0499497	Northing (UTM Y): 4398634	Horizontal Accuracy: (EPE / FOM / PDOP)	14 feet

### Photos:

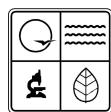
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
647	downstream site 16	648	upstream site 16		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

### Uses Observed\*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

Cropland/gravel roads

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other:				

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	100% Mud/Clay	% Bedrock

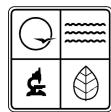
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Coontail/algae-benthic/100% duckweed

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_16</u></p> <p>Estimated Channel Incision: <u>&lt;1.0</u> (m) (height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>01</b> UTM X: <u>499456</u></td> <td style="width: 33%;"><b>01</b> UTM Y: <u>4398847</u></td> <td style="width: 33%; text-align: center;">15 feet</td> </tr> <tr> <td><b>11</b> UTM X: <u>499497</u></td> <td><b>11</b> UTM Y: <u>4398634</u></td> <td style="text-align: center;">14 feet</td> </tr> </table> <p>Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	<b>01</b> UTM X: <u>499456</u>	<b>01</b> UTM Y: <u>4398847</u>	15 feet	<b>11</b> UTM X: <u>499497</u>	<b>11</b> UTM Y: <u>4398634</u>	14 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>11:30 AM</u></p> <p>Dissolved Oxygen: <u>2.09</u> (mg/L)</p> <p>Dissolved Oxygen: <u>21.8</u> (% sat)</p> <p>Specific Cond: <u>297.6</u> (µS/cm)</p> <p>Water Temperature: <u>20.1</u> (°C)</p>														
<b>01</b> UTM X: <u>499456</u>	<b>01</b> UTM Y: <u>4398847</u>	15 feet																				
<b>11</b> UTM X: <u>499497</u>	<b>11</b> UTM Y: <u>4398634</u>	14 feet																				
<b>Transect Cross-Section</b>																						
Station	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.61	0.20	0.60	0.10	0.60	0.15	0.65	0.13	0.60	0.10	0.61	0.24	0.61	0.15	0.60	0.18	0.60	0.20	0.62	0.14	0.61	0.13
2	1.22	0.55	1.20	0.23	1.20	0.28	1.30	0.28	1.20	0.25	1.22	0.45	1.22	0.22	1.20	0.22	1.20	0.43	1.24	0.24	1.22	0.30
3	1.83	0.63	1.80	0.30	1.80	0.31	1.95	0.43	1.80	0.33	1.83	0.63	1.83	0.29	1.80	0.43	1.80	0.50	1.86	0.30	1.83	0.36
4	2.44	0.85	2.40	0.38	2.40	0.35	2.60	0.62	2.40	0.47	2.44	0.84	2.44	0.44	2.40	0.60	2.40	0.55	2.48	0.55	2.44	0.43
5	3.05	0.60	3.00	0.40	3.00	0.43	3.25	0.71	3.00	0.68	3.05	0.74	3.05	0.50	3.00	0.75	3.00	0.64	3.10	0.45	3.00	0.62
6	3.66	0.51	0.60	0.60	3.60	0.62	3.90	0.75	3.60	0.55	3.66	0.66	3.66	0.71	3.60	0.62	3.60	0.79	3.72	0.30	3.66	0.55
7	4.27	0.38	4.20	0.43	4.20	0.70	4.55	0.64	4.20	0.44	4.27	0.49	4.27	0.66	4.20	0.48	4.20	0.60	4.34	0.22	4.27	0.41
8	4.88	0.20	4.80	0.29	4.80	0.53	5.20	0.52	4.80	0.37	4.88	0.31	4.88	0.50	4.80	0.31	4.80	0.50	4.96	0.15	4.88	0.24
9	5.49	0.15	5.40	0.10	5.40	0.21	5.85	0.30	5.40	0.20	5.49	0.18	5.49	0.37	5.40	0.14	5.40	0.31	5.58	0.10	5.49	0.10
<b>Right Bank</b>	6.1	0	6	0	6	0	6.5	0	6	0	6.1	0	6.1	0	6	0	6	0	6.25	0	6.15	0
<b>Feature Type</b>	(riffle, run, or pool)		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

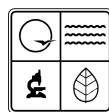
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 11:00	Site Location Description (e.g., road crossing): Jasmine Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 0498132	Northing (UTM Y): 4396898	Horizontal Accuracy: (EPE / FOM / PDOP)	16 feet
Site 11	Easting (UTM X): 0498350	Northing (UTM Y): 4396729	Horizontal Accuracy: (EPE / FOM / PDOP)	20 feet

#### Photos:

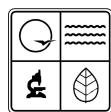
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
645	upstream site 17	646	downstream site 17		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

 (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:  
none

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering

Comments / Other:  
none

**Substrate\*:** (These values should add up to 100%.)

% Cobble	5% Gravel	80% Sand	% Silt	15% Mud/Clay	% Bedrock

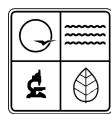
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

none
------

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: dry
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: dry
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: dry

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07 \_\_\_\_\_

Organization: Applied Environmental Solutions \_\_\_\_\_ Position: Field Technician \_\_\_\_\_

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p style="font-size: 1.5em; margin: 0;">Missouri</p> <p style="font-size: 1.2em; margin: 0;">Department of</p> <p style="font-size: 1.2em; margin: 0;">Natural Resources</p> <p style="font-size: 0.8em; margin: 0;">Site #: <u>0597_17</u></p> <p style="font-size: 0.8em; margin: 0;">Estimated Channel Incision: <u>1.5</u> (in)(height between low bank width and water)</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="width: 100%; text-align: right; padding: 5px;"> <b>Dissolved Oxygen</b> </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;"> Date: <u>9/22/2007</u> Time: <u>11:00 AM</u> </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;"> Dissolved Oxygen: _____ (mg/L) </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;"> Dissolved Oxygen: _____ (% sat) </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;"> Specific Cond: _____ (µS/cm) </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;"> Water Temperature: _____ (°C) </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;"> <b>* No water - dry conditions</b> </td> </tr> </table>	<b>Dissolved Oxygen</b>		Date: <u>9/22/2007</u> Time: <u>11:00 AM</u>		Dissolved Oxygen: _____ (mg/L)		Dissolved Oxygen: _____ (% sat)		Specific Cond: _____ (µS/cm)		Water Temperature: _____ (°C)		<b>* No water - dry conditions</b>																															
<b>Dissolved Oxygen</b>																																													
Date: <u>9/22/2007</u> Time: <u>11:00 AM</u>																																													
Dissolved Oxygen: _____ (mg/L)																																													
Dissolved Oxygen: _____ (% sat)																																													
Specific Cond: _____ (µS/cm)																																													
Water Temperature: _____ (°C)																																													
<b>* No water - dry conditions</b>																																													
<b>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</b>																																													
<p><b>01</b> UTM X: <u>498132</u> UTM Y: <u>4396898</u> 16 feet</p> <p><b>11</b> UTM X: <u>498350</u> UTM Y: <u>4396729</u> 20 feet</p> <p>Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters)</p> <p>(To determine Length of Reach)</p> <p>Field Staff: <u>RM/JF</u></p>																																													
<b>Transect Cross-Section</b>																																													
<b>Station</b>	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>																								
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)																							
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																					
1	0.40	0	0.41	0	0.38	0	0.41	0	0.39	0	0.40	0	0.39	0	0.45	0	0.37	0	0.39	0	0.40	0	0	0																					
2	0.80	0	0.82	0	0.76	0	0.82	0	0.78	0	0.80	0	0.78	0	0.90	0	0.74	0	0.78	0	0.80	0	0	0																					
3	1.20	0	1.23	0	1.14	0	1.23	0	1.17	0	1.20	0	1.17	0	1.35	0	1.10	0	1.17	0	1.20	0	0	0																					
4	1.60	0	1.64	0	1.52	0	1.64	0	1.56	0	1.60	0	1.56	0	1.80	0	1.48	0	1.56	0	1.60	0	0	0																					
5	2.00	0	2.05	0	1.90	0	2.05	0	1.95	0	2.00	0	1.95	0	2.25	0	1.85	0	1.95	0	2.00	0	0	0																					
6	2.40	0	2.46	0	2.28	0	2.46	0	2.34	0	2.40	0	2.34	0	2.70	0	2.22	0	2.34	0	2.40	0	0	0																					
7	2.80	0	2.87	0	2.66	0	2.87	0	2.73	0	2.80	0	2.73	0	3.15	0	2.59	0	2.73	0	2.80	0	0	0																					
8	3.20	0	3.28	0	3.04	0	3.28	0	3.12	0	3.20	0	3.12	0	3.60	0	2.96	0	3.12	0	3.20	0	0	0																					
9	3.60	0	3.69	0	3.42	0	3.69	0	3.51	0	3.60	0	3.51	0	4.05	0	3.33	0	3.51	0	3.60	0	0	0																					
<b>Right Bank</b>	4.00	0	4.10	0	3.80	0	4.15	0	3.95	0	4.00	0	3.90	0	4.50	0	3.75	0	3.95	0	4.05	0	0	0																					
<b>Feature Type</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%;">(riffle, run, or pool)</td> <td style="width: 12.5%;">dry</td> </tr> </table>																								(riffle, run, or pool)	dry																			
(riffle, run, or pool)	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry																									

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

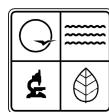
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 12:00	Site Location Description (e.g., road crossing): Twichell Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0497060	Northing (UTM Y): 4392484	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0496945	Northing (UTM Y): 4392408	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet

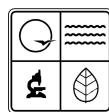
#### Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
649	upstream site 18	650	downstream site 18	651	T-4 site #18 tire tracks
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

## Comments:

Wildlife refuge, gravel road

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: none				

**Substrate\*:** (These values should add up to 100%.)

% Cobble	10% Gravel	80% Sand	% Silt	10% Mud/Clay	% Bedrock

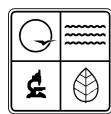
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Smartweed on gravel bars  
 Small amounts of algae

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**

**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Field Technician

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <b>Missouri</b> <b>Department of</b> <b>Natural Resources</b> Site #: <u>0597_18</u> Estimated Channel Incision: <u>4</u> (in)(height between low bank width and water)												<b>Dissolved Oxygen</b> Date: <u>9/22/2007</u> Time: <u>12:00 PM</u> Dissolved Oxygen: <u>12.3</u> (mg/L) Dissolved Oxygen: <u>141.1</u> (% sat) Specific Cond: <u>431.9</u> (µS/cm) Water Temperature: <u>22.2</u> (°C)											
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>497060</u> UTM Y: <u>4392484</u> 17 feet 11 UTM X: <u>496945</u> UTM Y: <u>4392408</u> 21 feet																							
Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)																							
Field Staff: <u>RM/JF</u>																							
<b>Transect Cross-Section</b>																							
Station	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)											
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.46	0	0.29	0.05	0.63	0.04	1.27	0.20	0.32	0.04	0.48	0.01	0.18	0.01	0.25	0.08	0.30	0.02	0.80	0.06	0.49	0.08	
2	0.92	<.01	0.58	0.04	1.26	0.02	2.54	0.51	0.64	0.07	0.96	0.07	0.36	0.05	0.50	0.09	0.60	0.05	1.60	0.12	0.98	0.06	
3	1.38	<.01	0.87	0.07	1.89	0.02	3.81	0.90	0.96	0.10	1.44	0.19	0.54	0.06	0.75	0.08	0.90	0.04	2.40	0.27	1.47	0.11	
4	1.84	0.01	1.16	0.03	2.52	0.01	5.08	0.72	1.28	0.09	1.92	0.25	0.72	0.05	1.00	0.07	1.20	0.03	3.20	0.37	1.96	0.10	
5	2.30	0.02	1.45	0.02	3.15	0.06	6.35	0.60	1.60	0.10	2.40	0.20	0.90	0.07	1.25	0.04	1.50	0.02	4.00	0.51	2.45	0.09	
6	2.76	0.01	1.74	0.04	3.78	0	7.62	0.55	1.92	0.11	2.88	0.13	1.08	0.10	1.50	0.01	1.80	0.04	4.80	0.62	2.94	0.07	
7	3.22	0.03	2.03	0.04	4.41	0.05	8.89	0.55	2.24	0.11	3.36	0.10	1.26	0.11	1.75	0.03	2.10	0.03	5.60	0.66	3.43	0.05	
8	3.68	0.02	2.32	0.04	5.04	0.01	10.16	0.54	2.56	0.10	3.84	0.06	1.44	0.12	2.00	0.04	2.40	0.02	6.40	0.55	3.92	0.04	
9	4.14	0.04	2.61	0.04	5.67	0.04	11.43	0.46	2.88	0.07	4.32	0.04	1.62	0.04	2.25	0.05	2.70	0.01	7.20	0.25	4.41	0.02	
<b>Right Bank</b>	4.6	0	2.9	0	6.3	0	12.7	0	3.25	0	4.8	0	1.8	0	2.5	0	3.05	0	8.05	0	4.9	0.01	
<b>Feature Type</b> (riffle, run, or pool)	run		run		run		pool		run		run		run		run		run		pool		run		

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

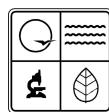
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



## Missouri Field Data Sheets for Recreational Use Stream Surveys

Department of

Natural Resources

### Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 12:45	Site Location Description (e.g., road crossing): John Roth Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

#### Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0495960	Northing (UTM Y): 4390056	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet
Site 11	Easting (UTM X): 0496005	Northing (UTM Y): 4389845	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet

#### Photos:

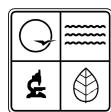
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
652	upstream site 19	653	downstream site 19	654	T-1 site #19 ATV tracks
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

#### Uses Observed\*:

(Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:  
gravel roads

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input checked="" type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other:				

**Substrate\*:** (These values should add up to 100%.)

% Cobble	20% Gravel	80% Sand	% Silt	% Mud/Clay	% Bedrock

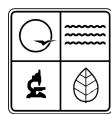
**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

Aquatic grasses on sand bars
No algae

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.



**Missouri Field Data Sheets for Recreational Use Stream Surveys**  
**Department of Natural Resources**  
**Data Sheet B – Site Characterization (continued)**

**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)

Bill Stuart-landowner  
 Straightened stream out 1976.

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Surveyor's Signature: \_\_\_\_\_ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Field Technician

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Site #: <u>0597_19</u></p> <p>Estimated Channel Incision: <u>2</u> (in)(height between low bank width and water)</p>	<p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33.33%;"><b>01</b> UTM X: <u>495960</u></td> <td style="width: 33.33%;"><b>11</b> UTM X: <u>496005</u></td> <td style="width: 33.33%; text-align: right;">UTM Y: <u>4390056</u></td> </tr> <tr> <td style="width: 33.33%;"><b>01</b> UTM Y: <u>4389845</u></td> <td style="width: 33.33%;"></td> <td style="width: 33.33%; text-align: right;">19 feet</td> </tr> <tr> <td style="width: 33.33%;"></td> <td style="width: 33.33%;"></td> <td style="width: 33.33%; text-align: right;">20 feet</td> </tr> </table> <p>Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	<b>01</b> UTM X: <u>495960</u>	<b>11</b> UTM X: <u>496005</u>	UTM Y: <u>4390056</u>	<b>01</b> UTM Y: <u>4389845</u>		19 feet			20 feet	<p><b>Dissolved Oxygen</b></p> <p>Date: <u>9/22/2007</u> Time: <u>12:45 PM</u></p> <p>Dissolved Oxygen: <u>8.45</u> (mg/L)</p> <p>Dissolved Oxygen: <u>99.4</u> (% sat)</p> <p>Specific Cond: <u>395.4</u> (µS/cm)</p> <p>Water Temperature: <u>22.2</u> (°C)</p>											
<b>01</b> UTM X: <u>495960</u>	<b>11</b> UTM X: <u>496005</u>	UTM Y: <u>4390056</u>																				
<b>01</b> UTM Y: <u>4389845</u>		19 feet																				
		20 feet																				
<b>Transect Cross-Section</b>																						
<b>Station</b>	<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.50	0.20	0.41	0.07	0.34	0.08	0.44	0.04	0.74	0.02	0.32	0.03	0.36	0.02	0.37	0.02	0.39	0.10	0.26	0.05	0.45	0.05
2	1.00	0.24	0.82	0.10	0.68	0.08	0.88	<.01	1.48	0.01	0.64	0.04	0.72	0.00	0.74	0.01	0.78	0.11	0.52	0.06	0.90	0.07
3	1.50	0.10	1.23	0.09	1.02	0.06	1.32	0.01	2.22	<.01	0.96	0.02	1.08	0.01	1.11	0.01	1.17	0.13	0.78	0.09	1.35	0.04
4	2.00	0.10	1.64	0.10	1.36	0.07	1.76	0.04	2.96	0.00	1.28	0.07	1.44	0.02	1.48	0.02	1.56	0.12	1.04	0.07	1.80	0.02
5	2.50	0.06	2.05	0.06	1.70	0.07	2.20	0.05	3.70	0.00	1.60	0.10	1.80	0.02	1.85	0.05	1.95	0.15	1.30	0.07	2.25	0.02
6	3.00	0.00	2.46	0.04	2.04	0.06	2.64	0.03	4.44	0.05	1.92	0.09	2.16	0.05	2.22	0.10	2.34	0.18	1.56	0.10	2.70	0.04
7	3.50	0.01	2.87	0.05	2.38	0.07	3.08	0.07	5.18	0.01	2.24	0.08	2.52	0.10	2.59	0.14	2.73	0.15	1.82	0.07	3.15	0.00
8	4.00	0.20	3.28	0.04	2.72	0.03	3.52	0.09	5.92	0.01	2.56	0.06	2.88	0.16	2.96	0.10	3.12	0.10	2.08	0.04	3.60	0.00
9	4.50	0.20	3.69	0.04	3.06	0.04	3.96	0.06	6.66	0.03	2.88	0.05	3.24	0.11	3.33	0.04	3.51	0.06	2.34	0.01	4.05	0.01
<b>Right Bank</b>	5.00	0	4.10	0	3.40	0	4.40	0	7.45	0	3.20	0	3.65	0	3.70	0	3.90	0	2.65	0	4.50	0
<b>Feature Type</b> (riffle, run, or pool)	pool	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	run	

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

WBID# 0597



Site# 1 Photo ID# 101-188, Upstream



Site# 1 Photo ID# 101-189, Downstream



Site# 1 Photo ID# 101-192, Fence



Site# 2 Photo ID# 101-194, Upstream

WBID# 0597



Site# 2 Photo ID# 101-193, Downstream



Site# 3 Photo ID# 101-197, Upstream



Site# 3 Photo ID# 101-196, Downstream



Site# 3 Photo ID# 101-198, Dam at transect 08

WBID# 0597



Site# 4 Photo ID# 101-201, Downstream



Site# 4 Photo ID# 101-202, Upstream



Site# 4 Photo ID# 101-203, Livestock watering

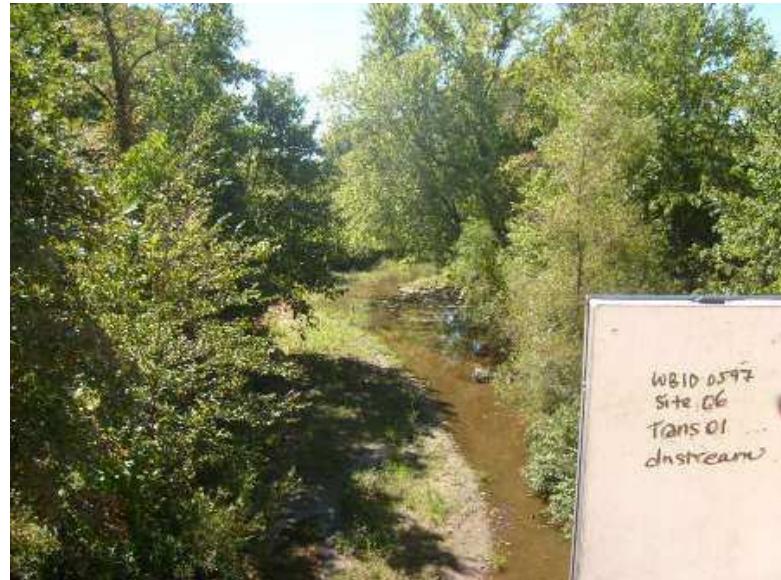


Site# 5 Photo ID# 101-204, Upstream

WBID# 0597



Site# 5 Photo ID# 101-205, Downstream-fence



Site# 6 Photo ID# 101-206, Downstream



Site# 6 Photo ID# 101-207, Upstream



Site# 7 Photo ID# 101-208, Downstream

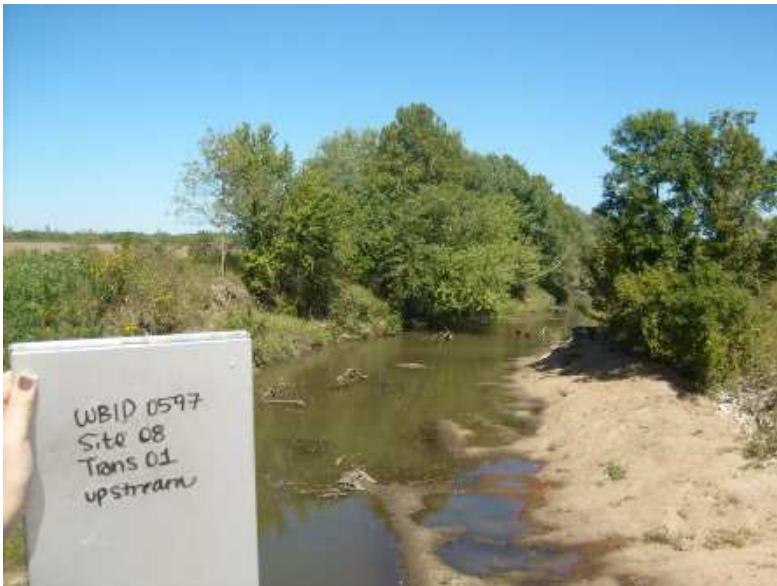
WBID# 0597



Site# 7 Photo ID# 101-209, Upstream



Site# 8 Photo ID# 101-211, Downstream



Site# 8 Photo ID# 101-212, Upstream



Site# 9 Photo ID# 101-213, Downstream

WBID# 0597



Site# 9 Photo ID# 101-214, Upstream



Site# 10 Photo ID# 101-215, Upstream



Site# 10 Photo ID# 101-216, Downstream



Site# 11 Photo ID# 101-217, Downstream

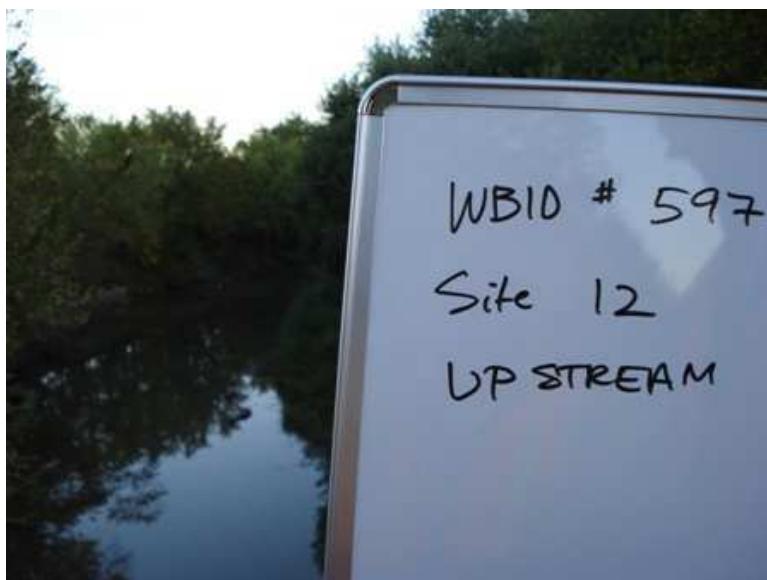
WBID# 0597



Site# 11 Photo ID# 101-218, Upstream



Site# 11 Photo ID# 101-219, No trespass sign

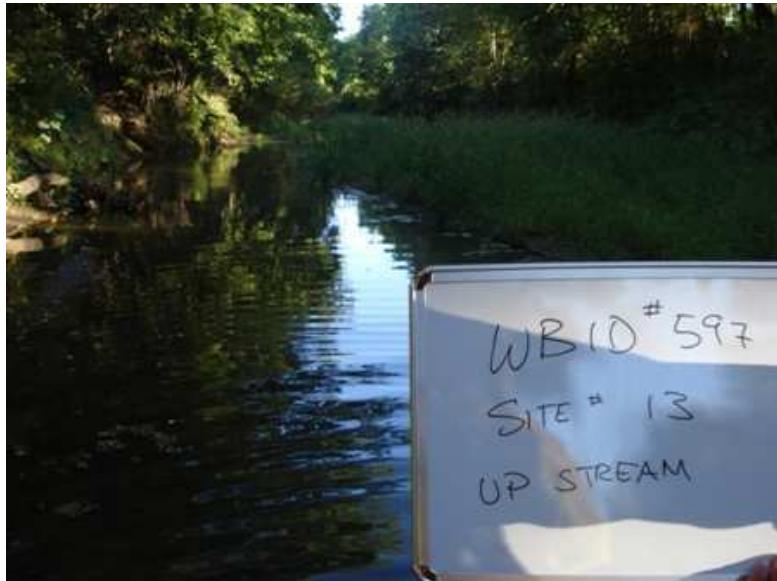


Site# 12 Photo ID# 634, Upstream



Site# 12 Photo ID# 635, Downstream

WBID# 0597



Site# 13 Photo ID# 636, Upstream



Site# 13 Photo ID# 637, Downstream



Site# 14 Photo ID# 638, Downstream



Site# 14 Photo ID# 639, Upstream

WBID# 0597



Site# 14 Photo ID# 640, Agi-drain T-7



Site# 14 Photo ID# 641, Agi-drain T-10



Site# 15 Photo ID# 642, Upstream



Site# 15 Photo ID# 643, Downstream

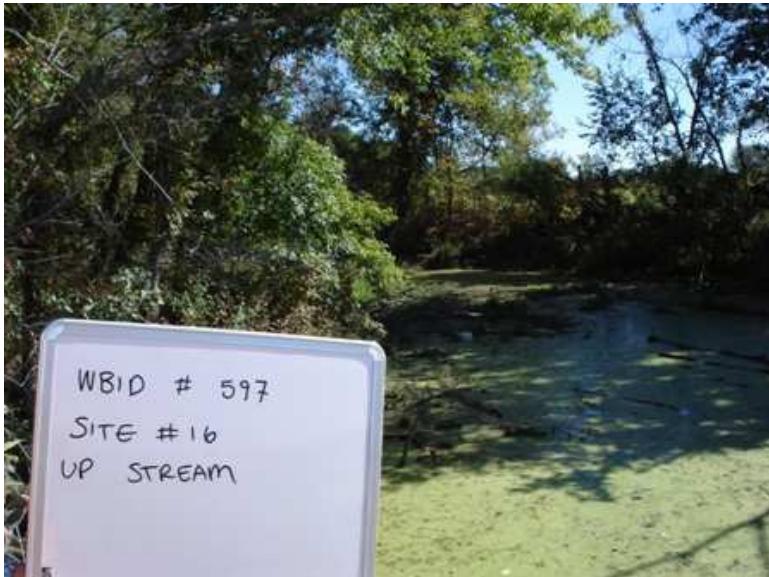
WBID# 0597



Site# 15 Photo ID# 644, ATV tracks T-6



Site# 16 Photo ID# 647, Downstream



Site# 16 Photo ID# 648, Upstream



Site# 17 Photo ID# 645, Upstream

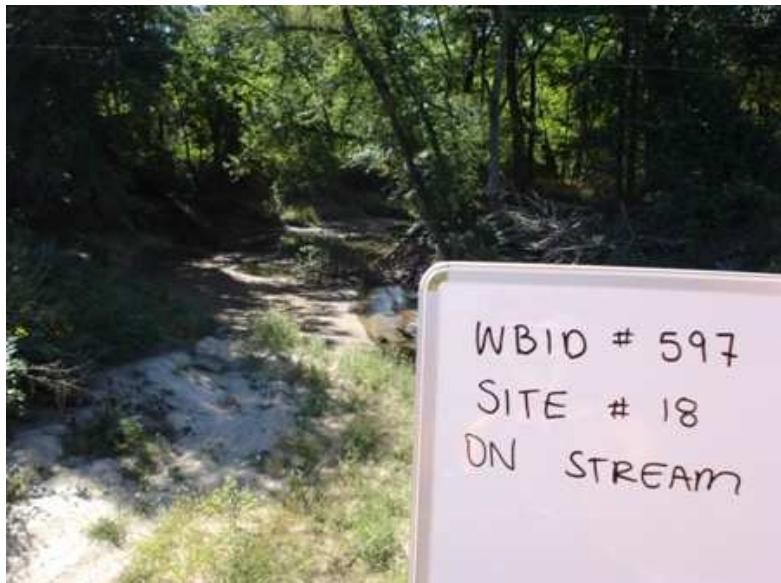
WBID# 0597



Site# 17 Photo ID# 646, Downstream



Site# 18 Photo ID# 649, Upstream



Site# 18 Photo ID# 650, Downstream



Site# 18 Photo ID# 651, Tire tracks

WBID# 0597



Site# 19 Photo ID# 652, Upstream



Site# 19 Photo ID# 653, Downstream



Site# 19 Photo ID# 654, ATV tracks